15 CENTS A COPY

THE OIL WEEKLY

OIL & GAS ENGINEERING

News Statistics

An Announcement

OF IMPORTANCE TO THE ENTIRE INDUSTRY...

The Hughes Tool Company has taken over the manufacturing rights of the Brown Safety Tubing Head, as previously manufactured by the Gray Specialty Company.

This Tubing Head was not added to the established line of Hughes Tools until it had thoroughly proven itself to be the outstanding device for the purpose for which it was designed.

The Hughes Tool Company solicits the patronage of former users of this tool and recommends it unreservedly to the entire industry.

HUGHES TOOL CO.
Houston,
Texas

HUGHES "BROWN" TUBING HEAD

March 27, 1931

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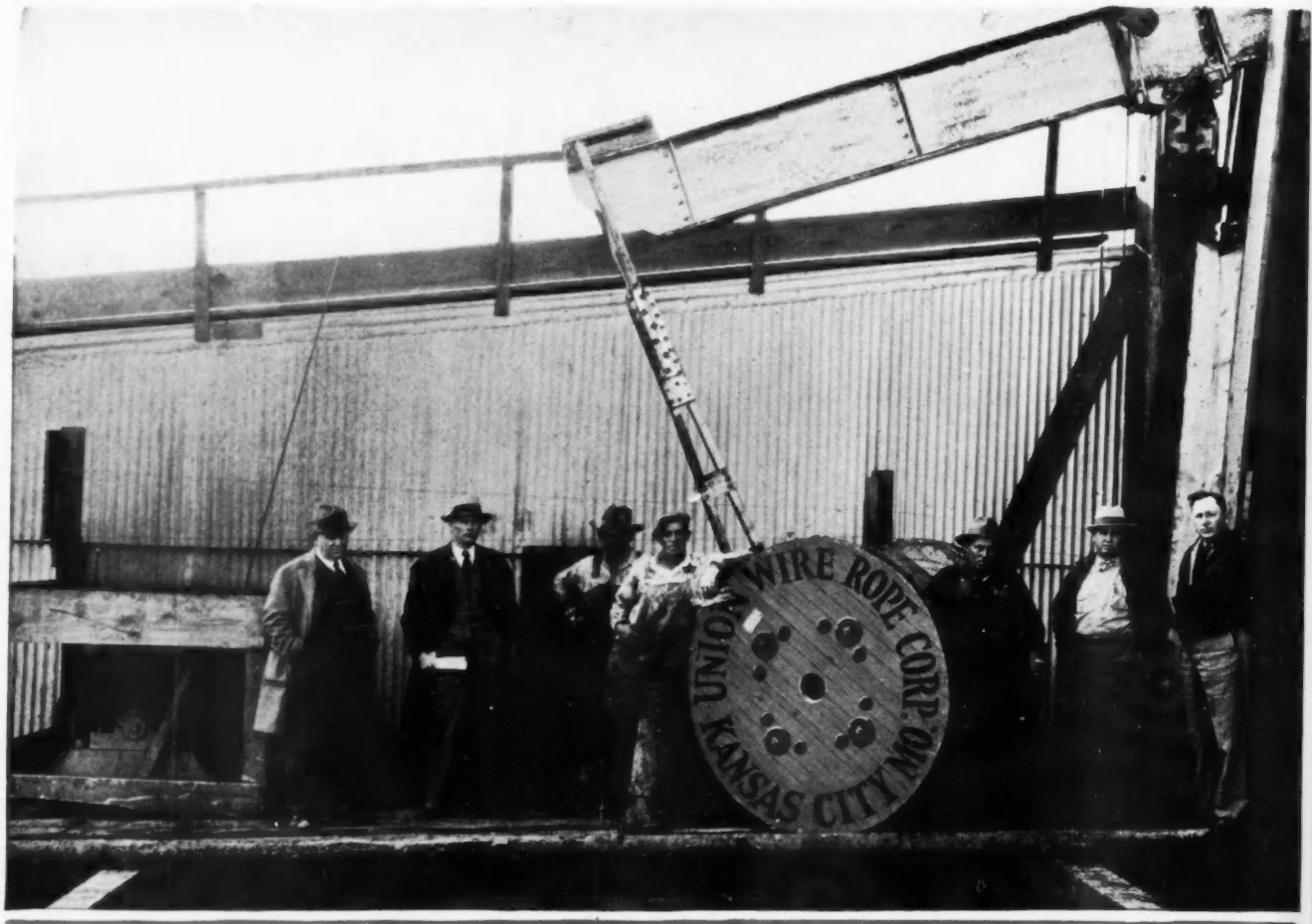


QUALITY ATTRACTS

UNIFORM high quality never fails to make friends out of those who are acquainted with UNION Wire Lines for the Oil Industry. This quality is insured for every line by our precision manufacturing methods, which include exhaustive tests at every step from drawing and tempering the wire to fabricating the finished rope.

UNION WIRE ROPE CORP. TRADE MARK

The men in the picture are, left to right: H. R. (Hal) Gruber, Union Wire Rope Corp.; Bob Nix, National Security Oil Co.; Walt Wise, truck driver; Blackie Chapman, tool dresser, Oil Well Drilling Co.; Harry Jerrens, driller; G. C. Conrad, Oil Well Drilling Co.; W. E. Cunningham, Union Wire Rope Corp.

UNION WIRE ROPE CORPORATION

3 North Madison Avenue, Tulsa, Oklahoma

Oil Country Sales and Export Office: 338 Kennedy Bldg., Tulsa

Branch Office and Warehouse: Portland, Ore.

Factory: 21st and Manchester, Kansas City, Missouri

PARKER ABBOTT, *Distributor* San Francisco, Calif.

JARECKI MANUFACTURING COMPANY

Mid-Continent and Eastern Oil Field Distributors . . . Stocks at All Stores

UNION WIRE LINES

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 15 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879

STURDY and EFFICIENT

Fig. 601 Gaso Walking Beam Pump for oil or water. Connects direct to the beam by means of pipe or wood pitman. For 450 to 600 lbs. working pressures.

Fig. 604 Gaso Walking Beam Pump for gas or vacuum. Used to take the gas from pumping wells or to put vacuum on the well. Gives 26 to 28 points vacuum

Walking Beam, Rodline and Piston Power Pumps — by GASO

These pumps have been perfected through more than a decade of development by an engineering staff that knows intimately the requirements of the oil industry. Carried in stock for immediate delivery.

Send us your requirements for detailed data on GASO Pumps for every purpose.

GASO PUMP & BURNER MFG. COMPANY
Tulsa, Oklahoma
Export Office: New York, New York

Fig 301 Gaso Piston Power Pump. Jerk or Pattern. With it only the high pressure of main pipe lines and is equally suitable for any low pressure work wherever push and pull or crank power can be utilized. 250 to 300 lbs. working pressure

Fig 604½ Gaso Power Pump for gas or vacuum. Similar to Fig 604, except designed to connect with the power or surface rods on the well.

Fig 201 Gaso Rodline Pump. Used in connection with the rod or shackle line between the power and well, or connected to the power line direct with pitman. 450 lbs. working pressure

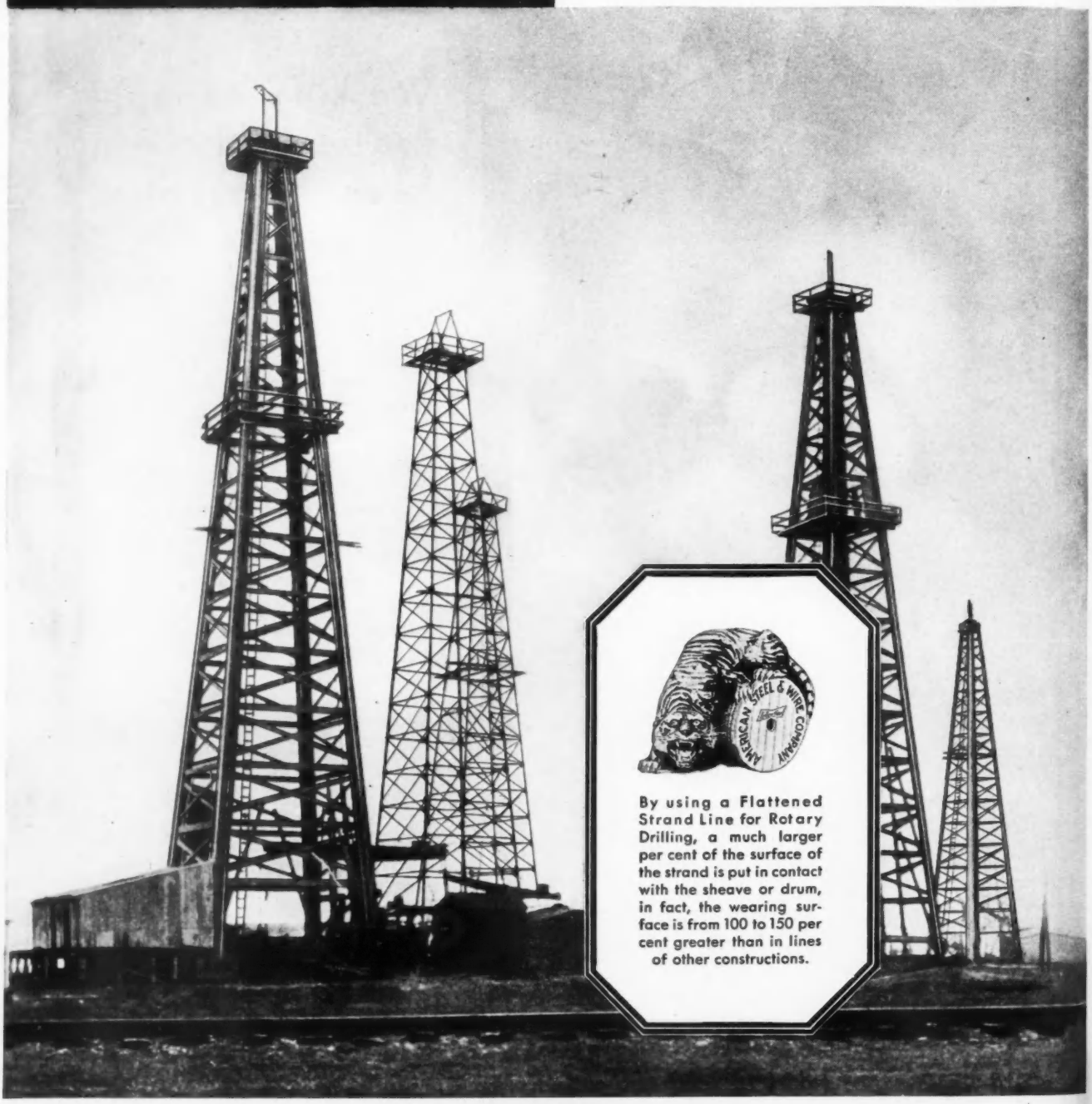
GASO PUMPS

for every oil industry need

AMERICAN STEEL & WIRE COMPANY WIRE LINES

Where Dependability is Vital

In the oil fields—where uninterrupted service is vital—the selection of wire lines deserves more than ordinary care. Because of their proved dependability and greater economy, most operators specify American Steel & Wire Company Wire Lines. It will pay you to know why in detail. Our engineers, in the oil country, will gladly assist you in solving your wire line problems.


AMERICAN STEEL & WIRE COMPANY
By using a Flattened Strand Line for Rotary Drilling, a much larger per cent of the surface of the strand is put in contact with the sheave or drum, in fact, the wearing surface is from 100 to 150 per cent greater than in lines of other constructions.

1831 COMMEMORATING AMERICAN STEEL & WIRE COMPANY 100 YEARS of PROGRESS IN WIRE MAKING 1931

AMERICAN STEEL & WIRE COMPANY

208 South La Salle Street, Chicago SUBSIDIARY OF UNITED STATES STEEL CORPORATION And All Principal Cities

Pacific Coast Distributors: Columbia Steel Company, Russ Building, San Francisco *Export Distributors:* United States Steel Products Company, New York

EACH VALVE *catalogs itself . . .*

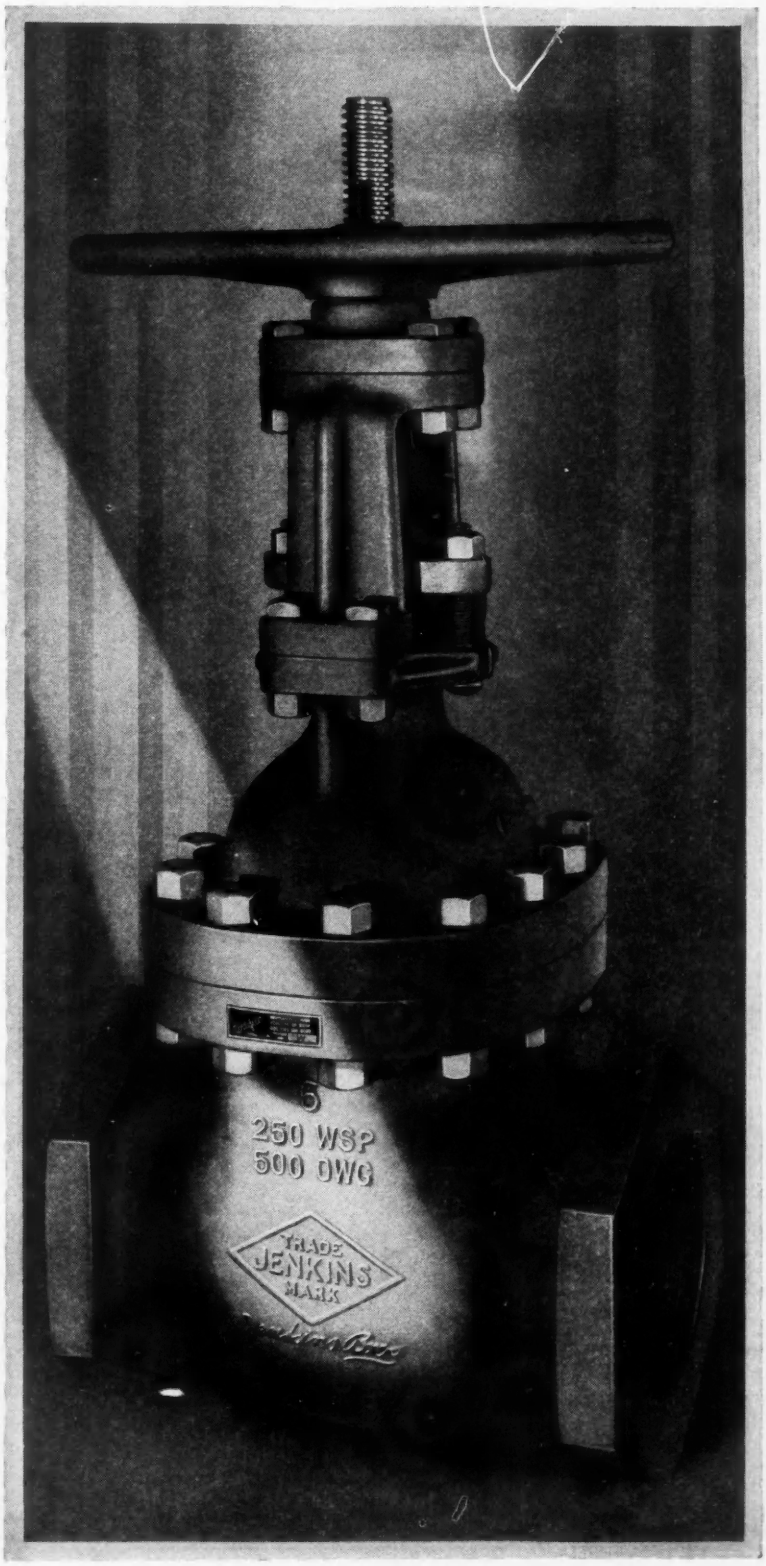
MARKS you can't mistake...because they are plainly cast right on the valve body...identify every Jenkins Iron Body Gate Valve. No need to ask—no need to look up a catalog rating. Every valve catalogs itself.

Not one of these Jenkins Iron Body Gates can get out of the Jenkins factory except through the testing room. Each valve must pass a severe test before it is certified with the brass plate for the services indicated on the valve body. You know at a glance what to expect of these individually tested, performance-proved valves.

Jenkins Iron Body Gate Valves, standard, medium, extra heavy, flanged and screwed, are obtainable through supply houses everywhere. Stocks at convenient points assure prompt delivery.

JENKINS IRON BODY GATE VALVES
SOLID WEDGE . . . BRONZE MOUNTED

Inside Screw, Stationary Spindle; Outside Screw & Yoke, Rising Spindle (Screwed or Flanged)	Rated Working Pressure, Pounds			
	STEAM	OIL	WATER	GAS
Standard	125	200	200	200
Medium	175	300	300	300
Extra Heavy	250	500	500	500



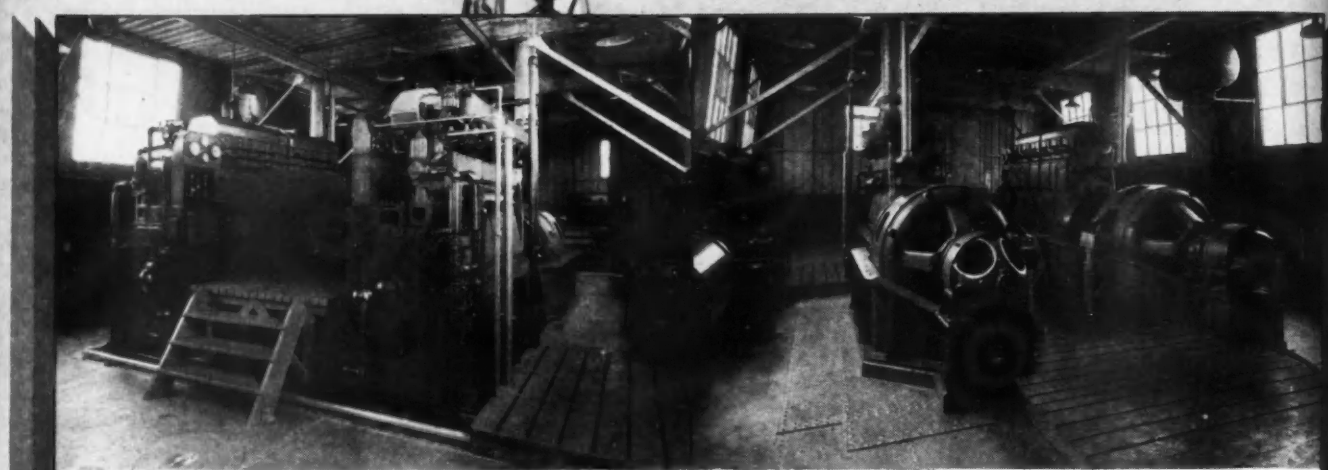
JENKINS BROS.

80 White Street, New York, N.Y. — 524 Atlantic Avenue, Boston, Mass. — 133 No. Seventh Street, Philadelphia, Pa.
646 Wash. Blvd., Chicago, Ill. — 1121 No. San Jacinto, Houston, Texas
JENKINS BROS., Limited, Montreal, Canada; London, England
Factories: Bridgeport, Conn.; Elizabeth, N. J.; Montreal, Canada.

**Illustrated above is a facsimile of certified brass plate carried by Fig. 204 a, screwed, Jenkins Extra Heavy Iron Body Gate Valve, rising spindle, illustrated at right* →

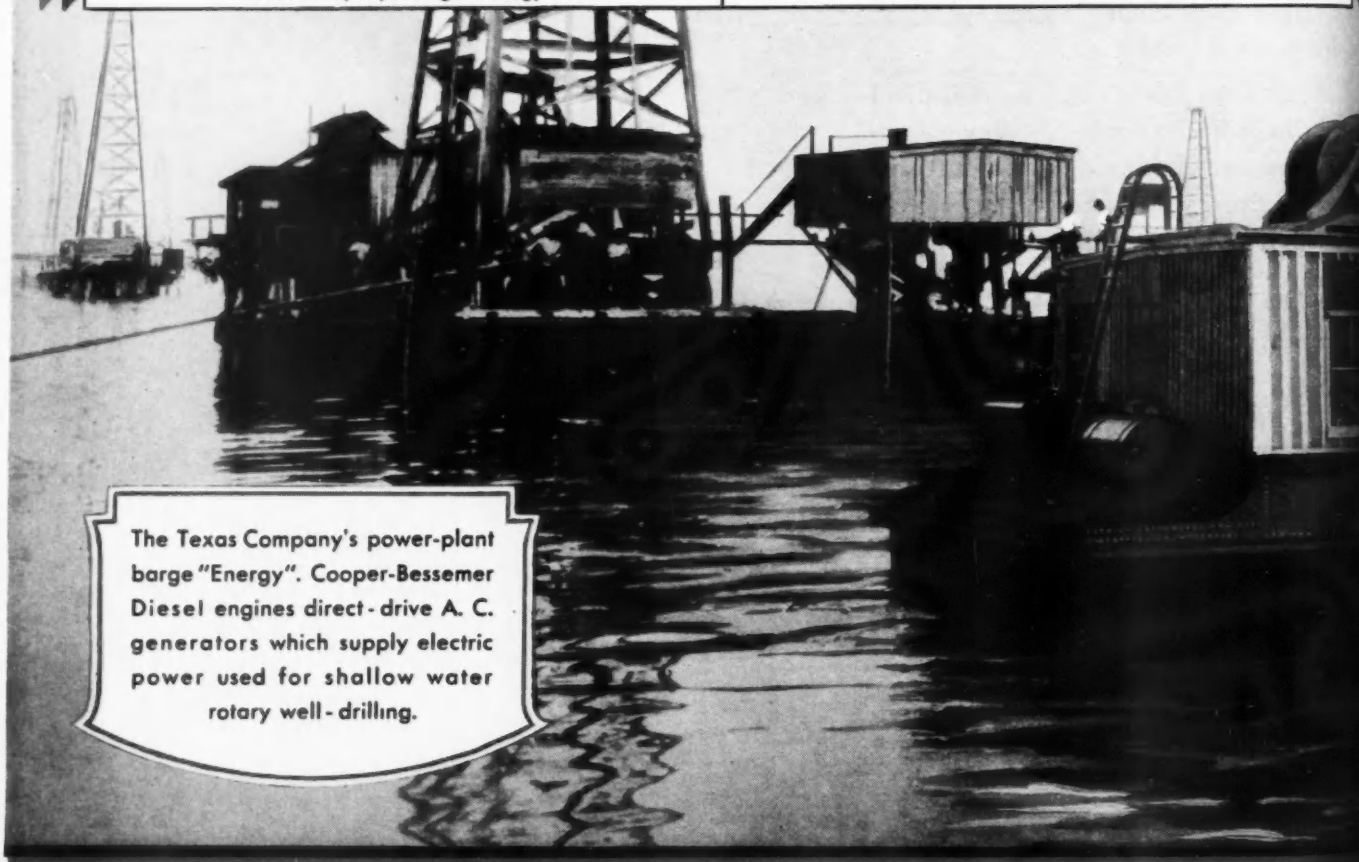
Jenkins VALVES
Since 1864

DIESELS PROVIDE



Two Type FP-6, 240 H. P., Cooper-Bessemer Diesel engines in The Texas Company's barge "Energy".

Two 175 K. W. electric generators direct-driven by the two 240 H. P. Cooper-Bessemer Diesel engines.



The Texas Company's power-plant barge "Energy". Cooper-Bessemer Diesel engines direct-drive A. C. generators which supply electric power used for shallow water rotary well-drilling.

COOPER-

ROTARY POWER

Diesel Electric Drive For Shallow Water Well-Drilling - SAFE - ECONOMICAL

PORTABLE - DEPENDABLE

THE COOPER-BESSEMER CORPORATION

MOUNT VERNON, OHIO — GROVE CITY, PENNSYLVANIA

P. O. Box 1911, *Tulsa, Oklahoma* — 1313 Magnolia Building, *Dallas, Texas* — 640 E. 61st Street, *Los Angeles, California* — Suite No. 301, 25 W. 43rd Street, *New York, N. Y.*

BESSEMER

The SYFO CLINOGRAPH

The perfect device for the daily recording of vertical deviation in drilling
Permanent Records . . . Quickly made . . . No dangerous acids . . . Inexpensive . . . Direct . . . Accurate . . . . . .

Running in a SYFO Clinograph takes very little time and the result can be read immediately.

The SYFO Clinograph is not sold, but leased at nominal rates. Being made in different sizes for different depths, it is necessary for the drilling company to advise the conditions under which the surveying will be done before quotation can be made.

The presence of crookedness in a hole is not indicated by any clear cut evidence recognizable from drilling operations—until trouble starts. Even then the major portion of the grief falls on the owner after the well has been brought in and not on the drilling contractor.

As a result well owners are today insisting that the hole be surveyed as it is drilled, making only a fixed latitude from the vertical permissible—no more. For verifying the result and course of the hole, the SYFO Clinograph affords the best check.

The SYFO Clinograph represents a radical improvement in the design and method of operation of inclination measuring instruments. Its advantages may be summarized as follows:

It affords a direct and accurate record. The record is easily obtained *without the use of dangerous acids.* The test is quickly made. The record is on paper and can be filed for reference. Ruggedly built and will operate without decrease in efficiency. Operates on wire line running through drill stem or on sand or bailing line in open hole.

WRITE FOR COMPLETE DESCRIPTIVE LITERATURE AND RATES

SPERRY-SUN WELL SURVEYING CO.

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1504 First National Bank Bldg.

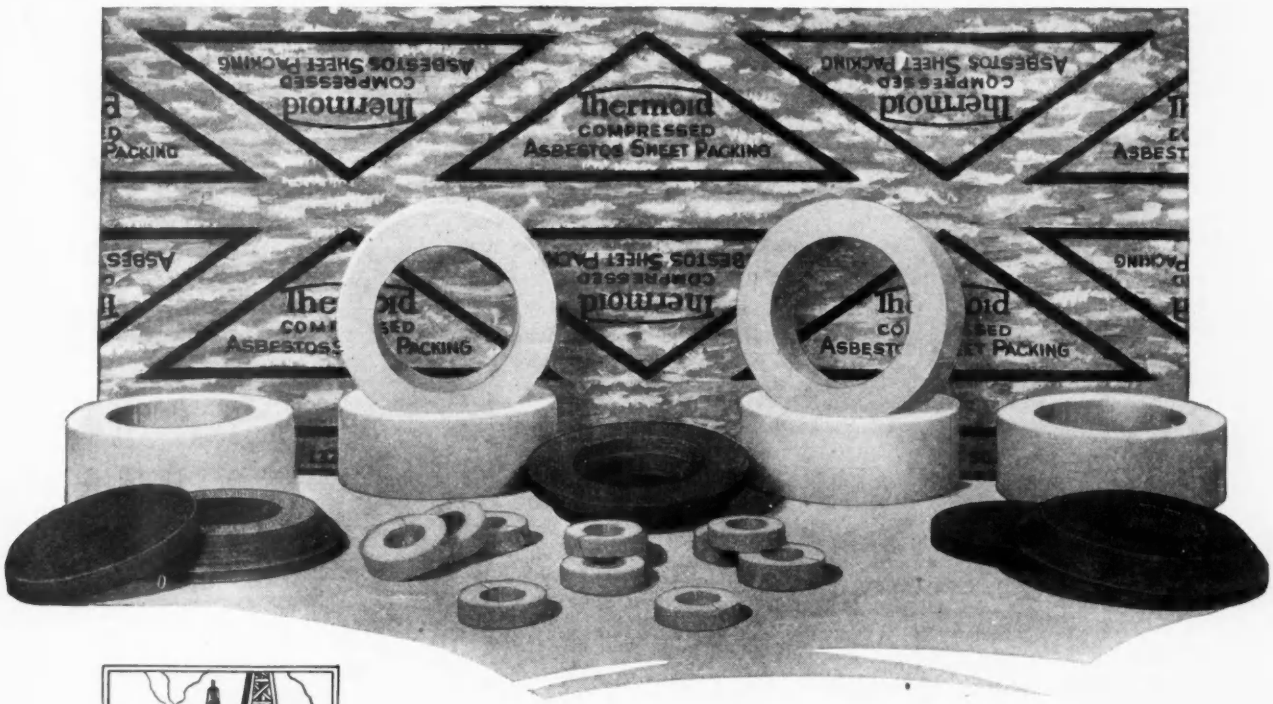
TULSA, OKLAHOMA:
402 Petroleum Building

Main Office - 1608 Walnut Street
PHILADELPHIA, PA.

LOS ANGELES, CALIF.:
415 Petroleum Securities Bldg.

HOUSTON, TEXAS
1420 Esperson Building

Built for Oil Field Use.....



..by Men *Who Know* Oil Field Conditions

Only the manufacturer who *puts himself in the consumer's place* can give the user of his products *exactly what he wants.* Thermoid engineers have done just this . . . making the problems of the oil country *their problems* . . . putting into every Thermoid product all the service and dependability they themselves would expect were they *the users* instead of *the makers.*

In specifying mechanical rubber goods, remember that there is a Thermoid product for almost any purpose you care to name . . . a Thermoid product *built for the job* by men who *thoroughly understand* the *job's requirements!*

Distributed by:

Hinderliter Tool Company, Tulsa, Okla.
Petroleum Equipment Company, Los Angeles, Calif.
Victor Belting & Rubber Company, Los Angeles, Calif.

THERMOID RUBBER COMPANY
Trenton, New Jersey

Gentlemen:

I am interested in Thermoid products. Please send me your catalog.

Name.....

Address.....

Firm Name.....

Thermoid

RUBBER GOODS FOR THE OIL COUNTRY

WHY

are these so POPULAR?

. . . a positive safety lock for any style bit and absolutely prevents backing off when going into the hole.

Drillers who use this drill collar have told their friends and these friends have told others, and more and more are being sold as a result.

Safety Drill Collars

Fish Tail Locked

Rock Bit Locked

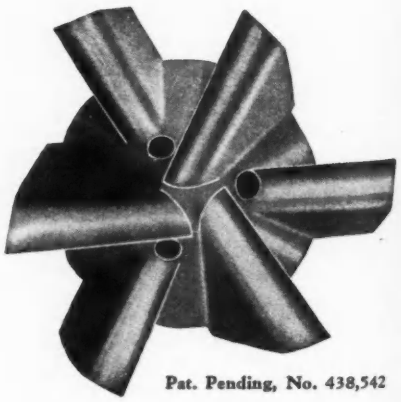
Safety Drill Collars

Pat. Pending No. 487,553

SIX BLADE STRAIGHT ROCK BIT

Six Blade Bit

Cuts a full-gauge hole straight down through solid formations. It will not jump or lead off.



Pat. Pending, No. 438,542

END VIEW OF ROCK BIT

Your Supply House Carries Brewster Products

The Brewster COMPANY~INC.

Shreveport,Louisiana

Your Supply House Carries Brewster Products

COMPLETE STOCK carried at these warehouses: Iverson Specialty Co., Oklahoma City, phone 2-2833; Houston Store, 2000 Harrington St., phone Capitol 3021.

IN oil lines and gas lines . . . Youngstown pipe has long served with distinction in the transportation of both of these important commodities. Thousands of miles of pipe-lines have proved Youngstown's ability to withstand the extremes of soil, climatic and atmospheric conditions as well as rough field handling.

From the smallest gathering-line to the largest cross-country pipe line, every length of Youngstown steel pipe is carefully manufactured to give the longest service under the most adverse conditions . . . and do it at the lowest cost per mile. Youngstown pipe is strong, durable and easy to handle; it welds easily; and it saves time and money in installation. It is a sound investment. Use Youngstown Electric Weld, Seamless or Lapwelded pipe for complete satisfaction.

. . . . *for* **OIL LINE**

or

GAS LINE . . . . .

• YOUNGSTOWN •

GALVANIZED SHEETS PROTECT · SAVE WITH STEEL

THE YOUNGSTOWN SHEET AND TUBE CO.

One of the oldest manufacturers of copper-steel, under the well-known and established trade name "Copperoid"

General Offices: YOUNGSTOWN, OHIO

DISTRICT SALES OFFICES:

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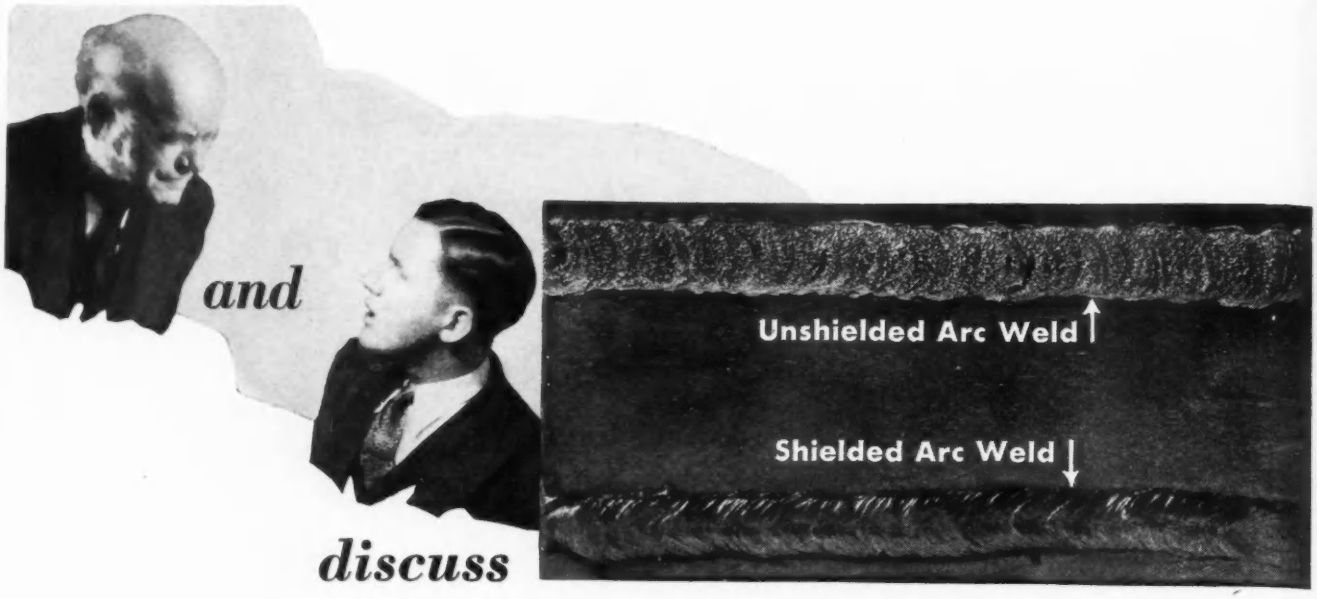
3000 Santa Fe Avenue, Los Angeles, Cal.

◆

INTERNATIONAL SUPPLY COMPANY
Tulsa, Okla.
REPUBLIC SUPPLY COMPANY
2122 East 7th Street, Los Angeles, Cal.



NON-CORROSIVE WELDS

"But, lad, how can one weld be attacked more by corrosion than any other weld? Is it a difference in the make-up of the metal deposited?"

"That's very nearly it, as the photograph of two welds shows. The chemical content of the metal in the rod that made the upper weld is the same as the metal in the rod that made the lower weld. A 72-hour immersion in a 50% hydrochloric acid solution of a test sample containing welds made by a 'Shielded Arc' and an ordinary arc shows a difference in the metal of the welds."

"How come that a change can be made so quickly, while the metal is on its way from the rod to the weld?"

"The metal on the way from the rod to the weld is in a molten state and absorbs oxygen and nitrogen from the surrounding atmosphere. Oxygen and nitrogen are necessary for human life but are not good for welds. The lower weld was shielded from the oxygen and nitrogen of the air by a Lincoln 'Shielded Arc' process."

"Then you feel that resistance of welds to corrosion is something that all users of arc welding should INVEST in?"

"Yes . . . for the LONG PULL, because a Lincoln 'Shielded-Arc' weld will stretch at least 18% in 2 inches and will not break until pulled to a tension of 60,000 to 75,000 lbs. per sq. in. Another reason for linking with

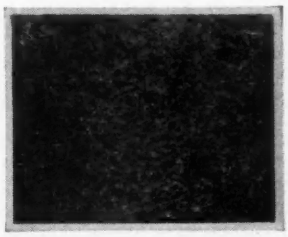
LINCOLN

W-171

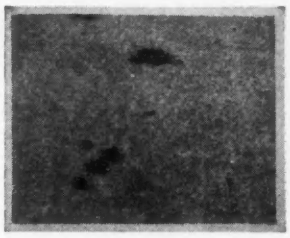
A product of the largest manufacturers of Arc Welding Equipment in the World

THE LINCOLN ELECTRIC COMPANY, CLEVELAND, OHIO

What! THESE TWO PANELS WORTH THOUSANDS OF DOLLARS?

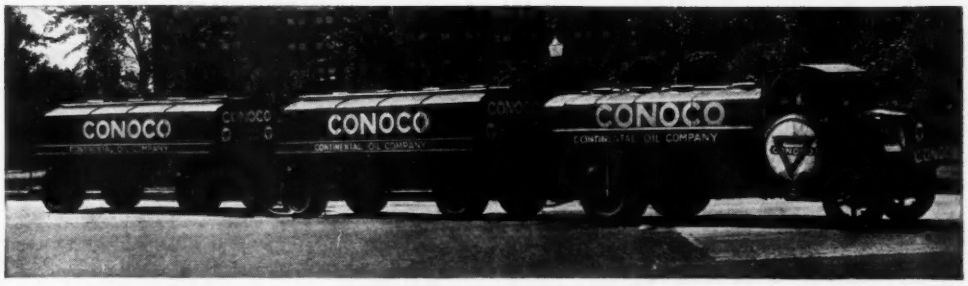


Metal Protective Paint Vehicle
This shows what happens to a film after only 7 months' exposure 45 deg. south.



Dulux Vehicle
After 19 months' exposure. More than 175% longer life. A 45° Southern exposure is doubly severe. Each of the steel panels received only a single coat of clear vehicle without rust-inhibitive pigment.

Note the Dulux Finish, expected to make obsolete the oil and varnish types of finishes now used on oil equipment. Write for technical bulletin on latest du Pont chemical development.



Linking low distribution costs to lower maintenance costs. The Continental Oil Company profits also by the improved appearance of this prize truck and trailer train in red and white Dulux.

THE metal panels themselves are not so valuable. But the story told by the finishes on these panels is worth a lot of money to oil companies. Some companies are already proving it.

On one panel you see a high grade metal protective paint vehicle of the type now used extensively. On the other you see du Pont Dulux vehicle, a new type of coating for oil property and equipment. And Dulux replaces all known protective and decorative coatings in the oil industry today.

Here are some reasons why Dulux should be worth so much to any company. Read them and then ask us to send you more complete technical data regarding this truly remarkable chemical development.

Three Year Durability Test

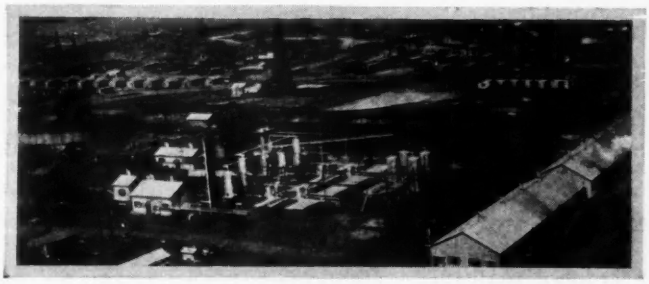
Dulux is a new finish but its properties have been tested over a three-year period. These field tests indicate that Dulux Finishes last 50% - 100% longer than oil and varnish types of finishes. They resist to a remarkable degree the paint-destroying ultra-violet rays of sunlight.

Dulux finishes wear away so slowly that they will give full protection to the covered surface after ordinary films have cracked, peeled, scaled and exposed the metal or wood underneath. They are extremely resistant to the action of petroleum, petroleum solvents and ordinarily destructive gases.

And here's something to remember in finishing filling stations, pumps, lubesters, tank wagons and buildings —where retention of good appearance is essential. The field tests also show that Dulux retains its original color, gloss and beautiful appearance 50% to 100% longer. It is the "retarded chalking" feature which makes possible the extremely slow fading of Dulux colors. It is the extremely hard, yet flexible, Dulux film which prevents the collection of dust and dirt.

To finish equipment quickly, use Dulux. It dries hard in one-third the time required by average finishes. And it leaves a smooth, hard surface which makes eventual quick refinishing possible at less labor cost. Dulux finishes differ slightly for various types of equipment. These finishes come in a wide range of colors and are applied with spray or brush.

Now how about that technical bulletin? You are going to want to reduce costs this year. Find out how to do it with Dulux. Just send for your bulletin to E. I. du Pont de Nemours & Co., Inc., Dept. M3, 1616 Walnut St., Philadelphia, or 351 California Street, San Francisco.



Heat, evaporation, corrosion keep out! Bright Dulux finishes reflect heat and bar corrosion at the five gasoline plants of the Phillips Petroleum Company.

DU PONT **DULUX**

making a BEND

HERE'S a typical view showing "Caterpillar" Tractors with All-Steel pipe-line winches mounted thereon. The winch with the stiff leg on it is lifting the pipe, the tractor that is across the ditch is holding down the other end. Winch-equipped "Caterpillars" have the traction to go anywhere pipe is to be laid, the power to carry operations on at top speed, the nimbleness to assist in such chores as pipe bending. From the day when they haul the pipe across fields where wheels may not venture to the day when they backfill a trench, "Caterpillars" are cost savers for pipe-line layers.

Prices—f. o. b. Peoria, Illinois

TEN . . .	$1100	TWENTY .	$1900
FIFTEEN .	$1450	THIRTY .	$2375
SIXTY	$4175		

Caterpillar Tractor Co.

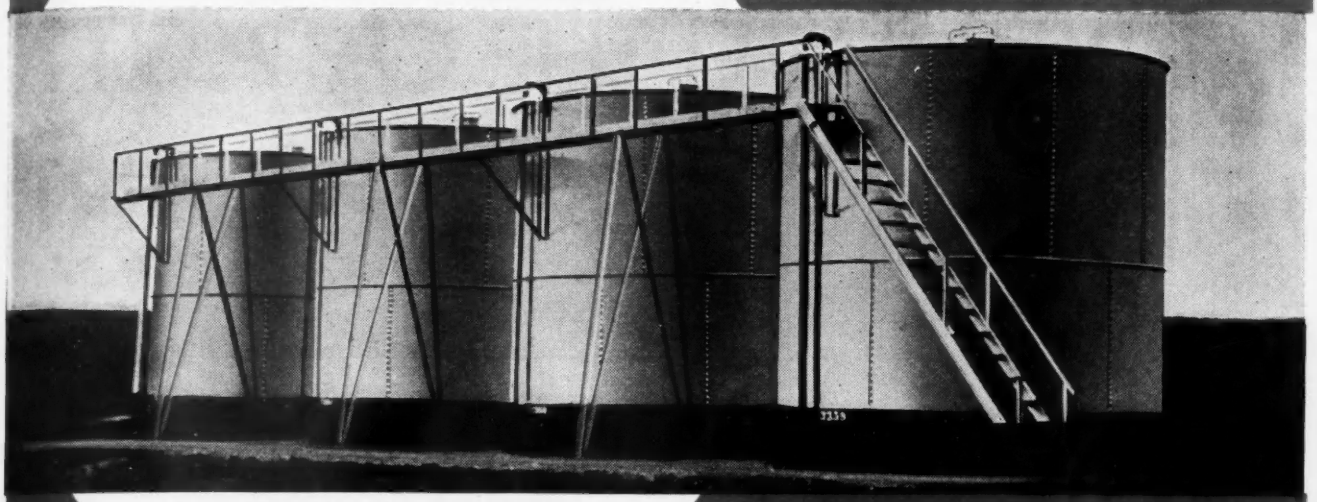
PEORIA, ILLINOIS, U. S. A.

Track-type Tractors Combines Road Machinery

(There's a "Caterpillar" Dealer Near You)

CATERPILLAR
REG. U. S. PAT. OFF.
TRACTOR

BUTLER



BOLTED TANKS USED 8 YEARS

TAKEN DOWN... RE-ERECTED

●

EIGHT years ago the Ohio Oil Company erected this battery of 500 barrel tanks. For eight years it served in the Lance Creek Field of Wyoming.

Recently the Keyes-Butler Tank Company, a unit of the Butler field service organization, cut the battery down and re-erected it.

After eight years of service the only new material needed in re-erection was new bottoms. The eight year old body and deck sheets were in excellent condition.

Like many others, the Ohio Oil Company has standardized on Butler Bolted and Welded Oil Field Tanks in all its operations which extend over Wyoming and Montana.

If you wish the substantial kind of economy that comes from long wear, low maintenance, oil conservation and simplified portability—call a Butler field office for dependable day or night erection, cutting down and re-erection service.

General Export Distributors

OIL WELL SUPPLY COMPANY

Lincoln Building,

London NEW YORK Tampico

Representative in Argentina

THE NATIONAL SUPPLY COMPANY

NEW YORK

BUTLER FIELD TANK SERVICE

These reliable field organizations are ready to render speedy field tank and ready-made steel building service:

Drane-Humphrey Co., at San Angelo, Pyote, Best and McCamey, Texas; and Hobbs, N. M.

Keyes-Butler Tank Co., of Casper, Frannie, and Cody, Wyoming.

Drane Tank Co., at Tulsa, Seminole, Oklahoma City, Okla.; Wichita, McPherson and Lyons, Kans.; Longview, McCamey and Pampa, Texas.

Gulf Coast Tank Company, 1612 Moffit St., Houston, Luling, Refugio, Pettus, Grand Saline, and Arp, Tex. V. P. Hughes, Prop.

Thomas Moran at Oil City, Shreveport, New Iberia, Lake Charles, Zwolle, Houma and Carterville, Louisiana; Henderson and Arp, Texas.

BUTLER MANUFACTURING COMPANY

1246 Eastern Ave., Kansas City, Mo. 946 Sixth Ave., S. E., Minneapolis, Minn.

A MIXER WITH THE CAPACITY OF A CEMENT PLANT

For a perfect cementing job (and it is better not to cement at all than to gamble with an imperfect job) two things are paramount —

The cement must be mixed with consummate thoroughness; and

the mixing must be done with the greatest possible speed.

The *thoroughness* of the Halliburton Mixer is best indicated by the fact that in the mixing process even the air spaces in the cement particles are more rapidly removed. The *speed* may be gauged by the astonishing truth that the capacity of a Halliburton Mixer is equal to that of an average cement plant.

Because no other method of mixing even approaches the Halliburton method, it stands to reason that no other process of cementing can even approximate the safety and dependability of the Halliburton process.

Erle P. Halliburton
President.

HALLIBURTON OIL WELL CEMENTING COMPANY DUNCAN, OKLA.

Do You Receive THE CEMENTER Regularly as Issued?

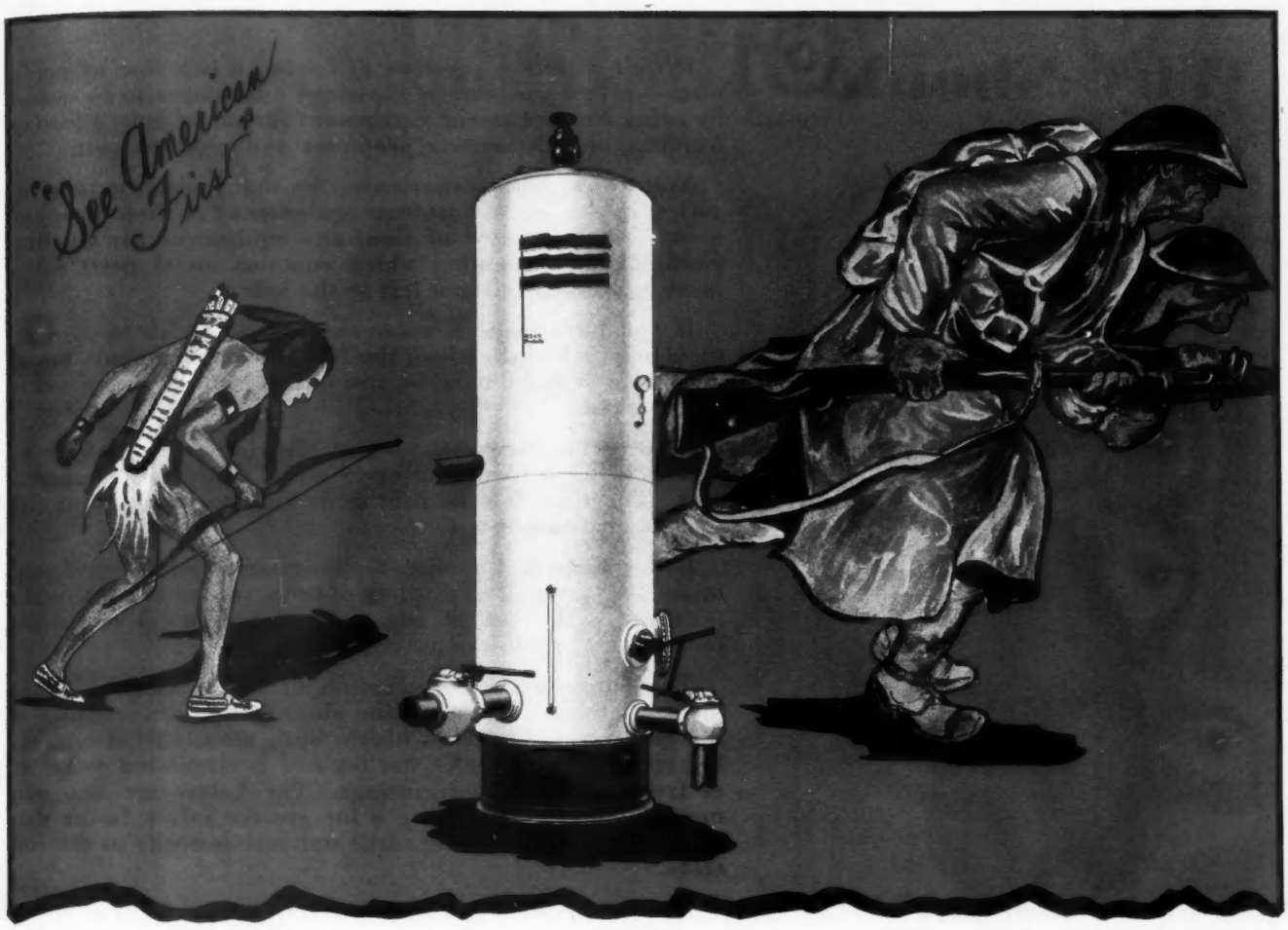
If you do not, tear out and mail this coupon, and we will see to it that copies of this publication—containing practical oil industry information—are mailed to you regularly.

Name .....

Company .....

Address .....

OW



Famous Americans!

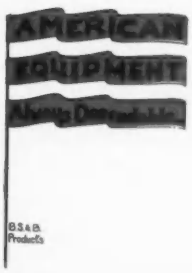
THE most outstanding features of the famed Americans—the early Indians, and the fearless Doughboys—were their endurance, and their capacity for action.

Another famous AMERICAN is the Improved AMERICAN Oil and Gas Separator, likewise winning fame for its endurance and capacity for action.

Efficiency and economy in operation and greater capacity are other factors in its favor. See an AMERICAN in action—a demonstration under actual field conditions will convince you of the greatness of this AMERICAN.

The Improved American Oil and Gas Separators

Equipped with the B. S. & B. Spray Condensers



For BONE DRY GAS through the vents, you'll find the AMERICAN most dependable. There are many features, distinctive and exclusive, that make the American "GREAT": The B.S.&B. Spray Condenser, which completely strips the oil from the gas, the inside float with ten times the capacity of the ordinary outside float, the inside tangential inlet, the disc foam baffle, the cone baffle and centrifugal force breaker and its greater strength. It is fabricated entirely of Flange Quality Steel—minimum tensile strength 55,000 lbs., and B.S.&B. Flexwelded. This Separator lives up to its name, as well as its fame, which it is rapidly gaining throughout the Mid-Continent and Rocky Mountain Fields.

May we introduce you to this famous AMERICAN? It will prove to be a dependable friend. May we, through a representative or literature, tell you more about it? Address Dept. (AA-18)

American Tank & Equipment Corp.

A SUBSIDIARY OF

BLACK-SIVALLS & BRYSON, Inc., Bartlesville, Okla.

OKLAHOMA CITY — OKLAHOMA

(Formerly AMERICAN TANK COMPANY)

©B. S. & B. Inc., 1931

Why Should YOU Use BAKER Cement Equipment ?

Baker Cement Float Collar

Baker Cement Guide Shoe

The Cement Float Collar and Cement Guide Shoe, as a combination, are popular everywhere.

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THE OIL WEEKLY

MARCH 27, 1931
Vol. 61, No. 2

S. W. ROBINSON
Editor

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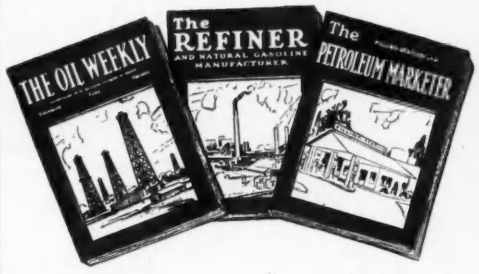

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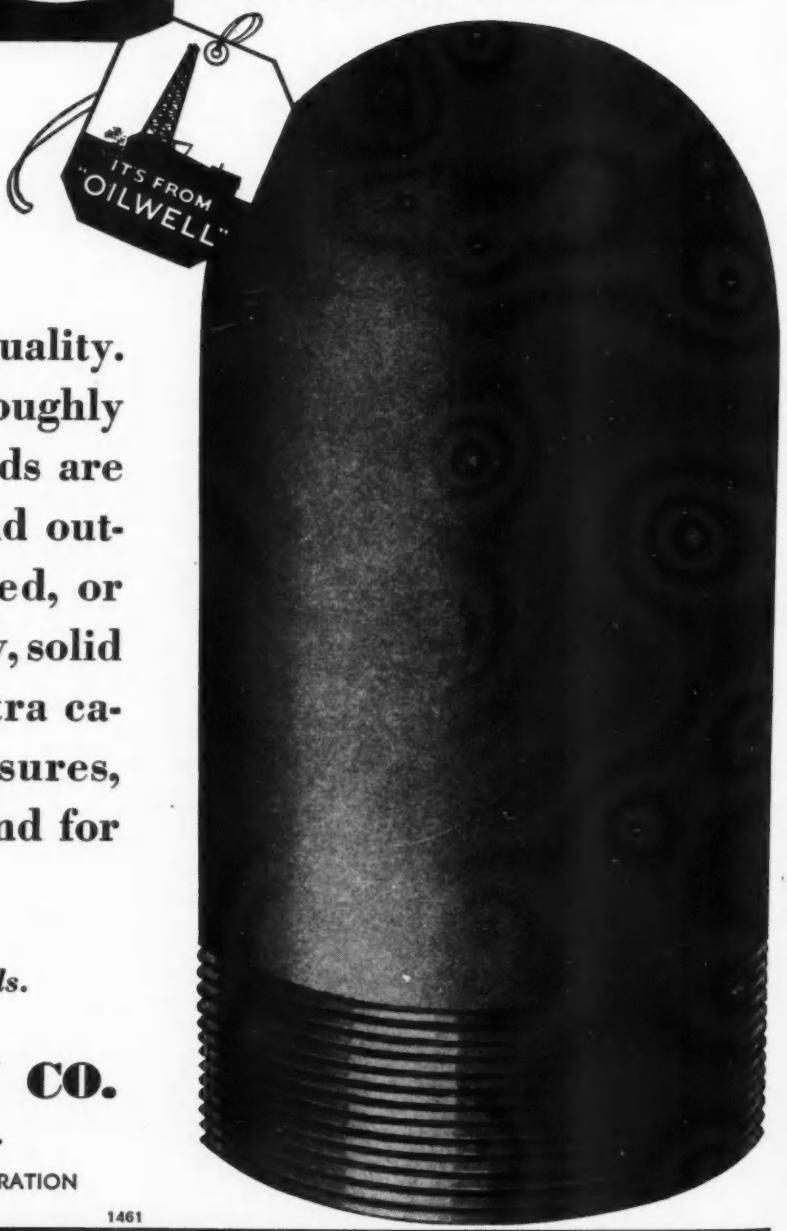

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THE OIL WEEKLY

VOLUME 61, NO. 2 MARCH 27, 1931

California Exposition Symposium Of Engineering Progress

Many Foreign Technologists Find Exhibits of Value

LOS ANGELES.—The Second Annual Oil Equipment and Engineering Exposition here closed Sunday, March 22, with a material increase in attendance for the week over the first exposition.

Many compliments were tendered the management on the exposition. The new building was ample to take care of all indoor exhibits, which, due to the fact that they were all on one floor under one roof, were arranged more conveniently than was the case when the first exposition was held in the Shrine Auditorium.

While attendance came largely from California oil men, the presence of a large number of foreign men was noticeable. Attendance from the Mid-Continent was small.

Men employed in oil companies operating in the West Indies and South America predominated among the foreign visitors.

The general arrangement and appearance of exhibits this year also was an improvement over last year. More working models were to be seen among the indoor exhibits than was the case formerly, and naturally they came in for a great deal of attention.

Foreign Visitors Attend

The exposition exceeded by far the first annual attendance, number of displays, beauty of decorations and quality and size of exhibits. Over 30,000 people visited the "show" during the week and expressions were received from all sides regarding the value of the exposition to the oil industry.

All classes of specialty tools were shown and were presented in a manner that enabled the oil men to inspect their construction, operation and adaptability. Many models with cut-away sections and others mechanically operated attracted the interest of the crowds and demonstrated their workings.

A great many of the heavy exhibits were shown in operation and simulated actual field conditions. These included drilling rigs, pumping units, rig accessories, large valves and various other pieces of oil equipment.

Fire fighting demonstrations were conducted at periodic intervals while other demonstrations of different kinds of machinery were in constant operation. A steel derrick was among the outside exhibits and attracted the attention of all those interested in drilling.

A number of technical meetings were held in connection with the exposition. A meeting room was provided for this purpose and facilitated the sessions. On the evening of March 17, the American Welding Society held a dinner in this room and followed it with technical discussions.

On Wednesday afternoon, the American Institute of Mining and Metallurgical Engineers sponsored a "straight hole meeting" that was well attended by engineers and superintendents.

An export meeting on Wednesday night was of great value to all the manufacturers of equipment interested in foreign trade. It was addressed by Roy E. Leigh of THE OIL WEEKLY who has recently returned from visiting every large oil field in the world. All phases of the export market were brought out at this meeting and an export association was formed at its conclusion. The great interest shown in this indicates that the association will be of considerable benefit to the majority of manufacturers.

The California Natural Gasoline Association held its meeting in the Alexandria Hotel on Thursday evening, March 19, and the Pacific Coast division of the American Petroleum Institute met at the Engineer's Club on Friday, March 20. In the exposition meeting room, the

Los Angeles. — Announcement was made March 22 by E. G. Lenzner, manager of the Oil Equipment and Engineering Exposition, that the 1932 exposition will be held from February 1 to 8 inclusive. Plans have been made to increase the size of the exposition building in the event that the special oil marketing equipment section, which will be a feature next year, is fulfilled.

Southern California Meter Association had a banquet followed by the presentation of technical papers the same evening. This was well attended and offered many valuable data to the visitors.

The entire exposition was far more successful in every way than had been contemplated beforehand. It was housed in its new buildings that had been erected for the purpose and which are permanent in construction. Most of the exhibits will remain in the building and will become part of the permanent exposition that is held throughout the entire year.

The permanent exposition will start again immediately after the second annual is finished. Plans are being perfected to add to the service now provided by the permanent show. The facilities of the large building comprise 72,000 square feet of floor space under one roof and offer the exhibitors the advantage of a year-round display of equipment.

Fatigue Failures Discussed By American Welding Society

Los Angeles.—A discussion on fatigue failures in forgings and on the advanced methods of welding as applied to the oil industry featured the meeting of the Pacific Coast section of the American Welding Society held at the Second Annual Equipment and Engineering Exposition in Los Angeles on March 16. No specific papers were presented and the discussions were led by Paul E. Jeffers, consulting engineer of Los Angeles, who is chairman of the section. At the conclusion of the meeting moving pictures showing the progress of steel manufacture from the mine to its completed form was presented by Erick Barnett, engineer for the Columbian Steel Company.

Fatigue failures have been subject to considerable study and several methods have been used for their detection. The value of deep etchings was brought out and the results that have been obtained by the use of these etchings were cited. The effect of speed in machining was felt to have a serious result in many instances.

Locked up stresses are frequently developed around the welds and this is especially true where the metal thickness is of any considerable extent. In some recent pipe line work a bell and spiggot joint was welded with an arc and, when put under test, failed at a point about one inch away from the weld. There was considerable difference of opinion among those present as to the cause of this failure but the majority maintained that in this case it was due to the locked up stresses that were set up in the operation.

The "weldability" of the parent metal was felt by many to have considerable influence on the success of welding operations, whether they be done by the electric arc or the oxy-acetylene method. Experiences were cited where the steel in one single shipment varied to a great extent and led to the observation that the manufacturer was not fulfilling his part in furnishing such a varied quality of material. This condition offers additional difficulties to the welder and is frequently the cause of serious results.

It was brought out very clearly that the microscope is one of the welder's best friends. It was also felt that in presenting technical discussions relative to welding work the contentions should be backed up by men who are specialists in certain phases of the metal industry. It was suggested that more men from the technical schools be brought into these discussions so that the practical problems confronting the welding industry could be brought home to them more forcibly and the difficulties presented to the younger minds so that a better understanding of welding conditions might obtain.

Manufacturers are Warned to Improve Their Export Trade

Los Angeles.—Nearly 200 manufacturers and their representatives met in the convention hall of the Oil Equipment and Engineering Exposition, Wednesday night, March 18, to hear comments on "how to improve export trade" as given by several men who had made trips into oil fields outside the United States. W. R. Martin presided.

Among those who made brief talks were: A. Zaidner, Amtorg Trading Corporation; E. G. Lenzner, manager of the exposition; Bill Cole, Byron Jackson Company; C. E. McLaren, National Supply Company; Ray Dudley, president, Gulf Publishing Company; Lock McDaniel, Reed Roller Bit Company; Harry Potts, Kerotest Valve Manufacturing Company.

The principal speech of the evening was made by Roy E. Leigh, associate editor, THE OIL WEEKLY, who urged his hearers to devote all possible attention to their export customers. He pointed out the constantly increasing yield of oil outside of the United States, and said that the American manufacturer of oil country or refinery equipment who does not appreciate the value of foreign business is sound asleep and that the total volume of his business will suffer in future years unless he does devote real attention to the export market.

Factors That Cause Crooked Holes Discussed By A.I.M.E.

Los Angeles.—The factors that cause crooked holes, improvements in straight hole drilling and the instruments being used for well surveys were all discussed at a meeting of the Pacific Coast section of the American Institute of Mining and Metallurgical Engineers held in connection with the Second Annual Equipment and Engineering Exposition at Los Angeles on March 18. This "straight hole" meeting was presided over by A. B. Menefee, consulting mining engineer and chairman of the section.

Clarence R. Dale, Dale & Nielson, presented a paper which treated the straight hole problem in a general way and touched on the methods being used to prevent a well from deviating from the vertical. It was his opinion, after several years' experience in the field and as a result of active oil well surveying work, that the most prevalent cause of crooked holes is the improper application of weight, such as unevenness of feed, failure to take into proper consideration the varying degrees of hardness of the various strata encountered, or the tendency to crowd the bit in order to make hole at a greater rate of speed than ordinary conditions would permit. In addition, crookedness is frequently due to caving of the formations caused

(*Continued on page 66*)

Scientific Groups Review Research *at* San Antonio Meet

By JACK LOGAN
Staff Representative

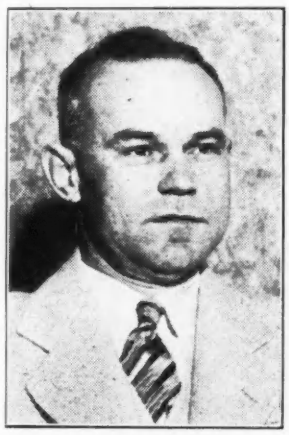
SAN ANTONIO, Texas.—The sixteenth annual meeting of the American Association of Petroleum Geologists, held here during the week March 21, was declared to be one of the most successful in the history of the organization, both from the standpoint of valuable papers presented and in attendance.

L. P. GARRETT
Vice president, Gulf Production Company, Houston, new president

A little over 1200 persons registered for the meeting, including active and associate members of the association and non-members who paid the registration fee. Less than 1000 registered at the previous annual meeting.

The organization now has 2562 members, according to an announcement made during the convention.

Although there were preliminary meetings and registrations of members for the convention beginning on Monday, the official program did not commence until Thursday morning, March 19, when the visiting geologists were welcomed at the municipal auditorium by a speaker representing the mayor of San Antonio. R. D. Reed, first vice president of the geological association, responded with a brief speech in which he stated that the growing importance of the oil region around San Antonio had been an incentive for selection of this city as the convention site and that there would no doubt be many important fields uncovered in South Texas in the future.

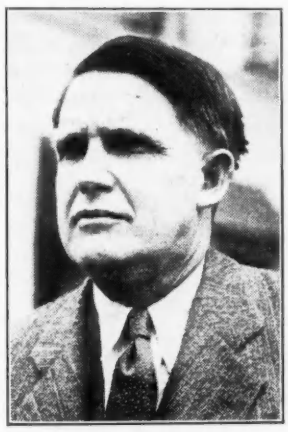


L. C. DECIUS
Chief geologist, Associated Oil Company, Los Angeles, first vice president

Following those introductory talks, the technical program began with reading by title of a paper on the Mirando and Pettus district fields, South Texas, which was followed by reading of the first paper of the session: "General Geology of Northeastern Mexico," by James L. Tatum, Monterrey, Nuevo Leon, Mexico."

The technical program continued on through Saturday, and on Friday and Saturday there were concurrent meetings and elections of allied organizations, the Society of Economic Paleontologists and Mineralogists and the Society of Petroleum Geophysicists.

On the program of the American Association of Petroleum Geologists proper, there were 91 papers scheduled, including 32 which were read only by title, the others being presented by their authors. The geophysicists' program included 11 papers, while that of the paleontologists and mineralogists included 21 papers.



FRANK R. CLARK
Chief geologist, Mid-Kansas Oil & Gas Company, Tulsa, second vice president

The papers on the geological program proper were divided into five main groups. The first group, consisting of 17 papers, dealt with the Gulf Coastal Plain. The second group of 10 papers were devoted to West Texas and Eastern New Mexico. The third group, comprising 22 papers, were concerned with origin, migration and accumulation of oil. The fourth group, consisting of 27 papers, dealt with miscellaneous technical subjects. The fifth classification, including 15 papers, discussed areas outside the Gulf Coastal Plain, West Texas and Eastern New Mexico.

Field Trips

Previous to the convention's official opening, a group of geologists made a field trip to Darst Creek, and other areas of the Luling district, and at the conclusion of the meeting there were four other field trips. The largest excursion, that to Monterrey, Mexico, started at 1:30 o'clock Saturday afternoon, with overnight stop at Laredo, and with the schedule providing for return to San Antonio Tuesday. Another group of 50 left at the same time for Laredo, to spend the night there, and to continue next morning to the Corpus Christi area fields. A like number went to Marathon, in far Western Texas, later Saturday. Finally, on Saturday a field trip to the Edwards plateau was made.

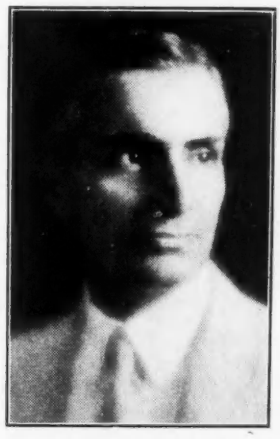


Photo by Bachrach

FREDERIC H. LAHEE
Chief geologist, Sun Oil Company, Dallas, third vice president

▼ ▼ Geologists, Geophysicists, Paleontologists Meet ▼ ▼

L. P. Garrett Named Head of Geologists Association

San Antonio, Texas.—Balloting was dispensed with in the annual election of officers at the national convention of the American Association of Petroleum Geologists here, due to only one candidate having been nominated for each office, and the nominees were elected by acclamation, Thursday afternoon, March 19.

L. P. Garrett of Houston was chosen as president of the association for the coming year. He is vice-president of Gulf Production Company, and is in charge of geological and geophysical work and land and leasing of the company in the Houston division. Other officers elected included: first vice-president, L. C. Decius, Associated Oil Company, San Francisco; second vice-president, in charge of finances, Frank R. Clark, chief geologist of Mid-Kansas Oil & Gas Company, Tulsa; and third vice-president, in charge of editorial work, F. H. Lahee, chief geologist for Sun Oil Company at Dallas. Mr. Lahee's selection was a re-election. These new officers, together with Sidney Powers, Amerada Petroleum Corporation, Tulsa, past president of the organization, will constitute the executive committee for the coming year.

Officers who served during the past year and through the San Antonio convention included: president, Sidney Powers, Tulsa; past president, J. Y. Snider, Shreveport, Louisiana; first vice-president, R. D. Reed, Los Angeles; second vice-president, Marvin Lee, Wichita, Kansas; and third vice-president, F. H. Lahee.

Decker Elected President of Paleontologists Body

San Antonio, Texas.—A spirited election of new officers and a variety of papers presented contributed to an interesting and successful annual meeting of the Society of Economic Paleontologists and Mineralogists, the division of paleontology and mineralogy of the American Association of Petroleum Geologists. So that the members of this organization might attend the opening ceremonies of the main organization Thursday and Friday morning, the program of the former did not commence until 10:30 o'clock Friday morning, March 20, and it was concluded that day.

The annual election resulted in selection of C. E. Decker, Norman, Oklahoma, as president. He is in charge of the geological department of the University of Oklahoma at Norman. Other new officers include: past president, Joseph A. Cushman of Sharon, Massachusetts; vice-president, W. S. Adkins, Bureau of Economic Geology, University of Texas, Austin; Gayle Scott, Texas Christian University, Fort Worth, Texas, reelected secretary-treasurer; and Raymond C. Moore, Lawrence, Kansas, chief of Kansas Geological Survey, reelected editor of the organization's publication.

Marcus A. Hanna, Houston, was past president on the executive committee during the past year, and C. C. Church, San Francisco, was vice-president during the past year and through the San Antonio meeting.

The Society of Economic Paleontologists and Mineralogists is a national organization with present membership of 230 active and 40 associate members, according to the annual report of the secretary read at the San Antonio meeting.

Total of 21 papers were on the program for the session, including 15 for presentation, and the remainder for reading by title.

Byrd Party Member Speaks on Frozen South Geology

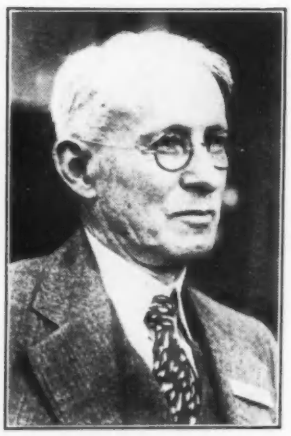
San Antonio, Texas.—The unusual and interesting conditions under which he did geological work on the Byrd Antarctic expedition were described by Laurence M. Gould, geologist of the expedition, here Thursday night, March 19.

"It is unquestionably the coldest land on earth," declared Mr. Gould. "The average temperature for the 365 days of the year is 13 degrees below zero, and one finds extremes as low as 78 degrees below zero."

Presenting motion pictures of his trip with two com-

(*Continued on page* 65)

▼ New Officers of the Society of Economic Paleontologists and Mineralogists ▼



C. E. Decker
University of Oklahoma, Norman, president

W. S. Adkins
University of Texas, Austin, vice president

Gayle Scott
Texas Christian University, Fort Worth, Sec.-Treas.

Raymond C. Moore
Kansas Geological Survey, Lawrence, editor

Knowing the Hole Saves Plugging Back Costs

By BRAD MILLS
Staff Representative

PLUGGING back of crooked holes to some level, above which the deviation from the vertical was within the established limits, has saved California operators an enormous sum during the past few years over the cost which would have been incurred in starting new holes from the surface, besides having enabled them to reach the objective formations much quicker than complete abandonment would have permitted. Since plugging back is very expensive at the best, it is obvious that the most it can accomplish is to reduce the cost to some figure between the normal cost and that which would have been incurred through outright loss of the hole. Abandonment often means skidding of the rig and an extended shutdown while various changes are made with surface equipment.

A review of interesting plugging back operations would ordinarily involve us in the various phases of drilling technique, such as the necessity for regular underground surveys with approved methods; but the discussion will be limited to effects and remedies, rather than to causes.

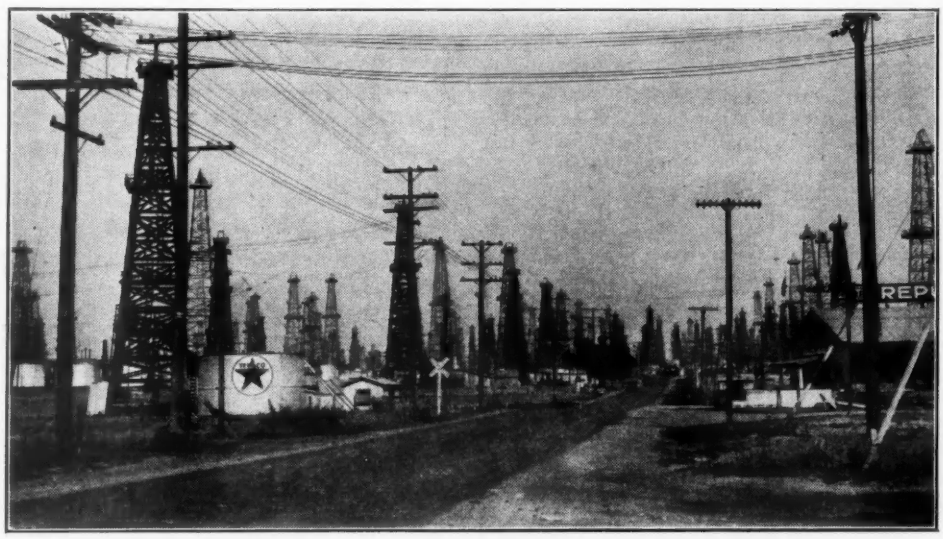
It might not be correct to say that crooked holes are not nearly as common as they were four, three and even two years ago, but the total loss of hole has been reduced considerably through a constant watch over its condition. The tendency to drill away from the vertical is perhaps as strong, but the discovery that a hole has been very crooked for two or three thousand feet has become a rare development. Even three years ago, luck was the principal guide and it was not unusual to plug back for enormous losses.

Plugging back now usually involves the loss of only a few hundred feet at the most, but the correction is perhaps just as important as it was during the early booms. As soon as the hole reaches the maximum allowed deviation, it is given a short distance to start swinging back toward the absolute vertical. If it fails to do this, it is plugged back to a satisfactory level.

At Santa Fe Springs, Long Beach and other fields, plugging back of wells during the early stage of deep development helped to bring about two conclusions. One was that plugging back could be done with less time and expense than abandonment of holes, and another was that a hole worth drilling at all was worth surveying regularly. Thus, the plugging operation did not necessarily lose its position, but the average loss per hole showed a steady decline.

During the rush to reach the Buckbee zone at Santa Fe Springs, Superior Oil Company failed to find the formation in Wardman 4 and Wardman 5, which were among the first wells to reach depths at which the objective sand should have been found. Cores showed sharp dips and operators offsetting the company's leases were worried over their prospects. Failure of the two wells to encounter the Buckbee zone meant either a questionable structural condition or plain cases of crooked holes. Large holes had been started in both wells and the best possible speed maintained. A free-for-all race for the Buckbee followed Wilshire Oil Company's discovery of the deep zone, and in the absence of data, the failure of Wardman 4 and 5 to find the

(*Continued on page* 30)



Santa Fe Springs, where plugging back of crooked holes was a common practice

Why Are Crude Oil Prices So Low?

By JAMES H. WESTCOTT

Author of "Oil, Its Conservation and Waste"

WHY not conform to the tendency of the times and answer THE OIL WEEKLY'S "Why" in its March 6, 1931, issue with the word "Psychology?"

The break in the stock market, the world depression, the lowered prices of raw materials and commodities and many of our present conditions have been attributed to it.

There is, however, more than a modicum of truth in this answer. Changed mental attitudes of the past two years or more, based on the realization of such facts as the former inflated market prices of certain stocks aand burdensome inventories, together with the fear of continuing depression, have brought about decreased purchases by many well able to continue their buying at former rates. This has prevented the reduction of such inventories as rapidly as it otherwise would have been and delayed the return of increased industrial and other activities.

One changed idea as to the oil industry—the determination to reduce the burdens of excessive inventories—has contributed substantially to the low prices of crude oil. The cancer of entirely too large above ground crude oil stocks had been allowed to spread until a major operation became necessary. Even the withdrawal of 22,467,000 barrels of crude oil from storage in 1930 did not materially affect the situation as it was less than 4.2 per cent of such stocks at the beginning of that year. It reduced the carrying charges, interest and costs of excessive inventories by only $5,616,750 for the year, based on an annual rate of 25 cents a barrel. Note also, that the inventories of refined products were decreased by only 829,000 barrels, or less than one-half of one per cent of their amount on January 1, 1930.

But these 1930 reductions of inventories were rather remarkable in view of federal anti-trust laws. They came about through the earnest co-operation between the states of Oklahoma, Texas and California and the oil producers, the encouragement received from the executive department of the federal government and the passage of the United States law permitting the unit operation of oil leases on the public lands. It is significant of the innate ability of the oil industry to adjust itself, eventually, to changing conditions, unless too much hampered by laws. It leads to the belief that its problems can and will be worked out through voluntary action and/or legal co-operation.

This reduction of stocks could well have gone much further in 1930 if federal anti-trust laws had encouraged agreements for the co-operative drilling and development of new oil fields on state and privately owned lands; or if such laws had been interpreted judicially as not applying to reasonable agreements for the conservation of this vital national and natural resource, petroleum.

Large crude oil inventories were warranted 10 years or more ago when grave doubts existed as to our oil reserves. Abnormally high seasonal gasoline inventories were also then justified as only 26 per cent or less of crude oil was refined into gasoline.

However, during the last few years, the greater efficiency in the discovery of crude oil, the increased rapidity in the drilling of oil wells, the many new fields brought in, the larger available reserves of older fields through repressuring and water flooding and the increased recovery of the oil content of sands by improved production methods, have overcome the fear of the dearth of crude oil for at least some years to come.

Improved refining and cracking equipment and the decrease of losses have increased the recovery of gasoline to 39.9 per cent[1] of the crude oil refined while the extraction of gasoline from natural gas and its use at refineries have given us 47.0 per cent of gasoline, based on the barrels of crude oil refined. The end is not yet, as higher percentages of gasoline to the crude oil refined will be obtained.

These new factors in the oil industry have made the accumulation or holding of very large inventories of crude oil and refined products unnecessary and archaic. The officials of certain oil companies have realized this. They have not only changed their former policy of increasing crude stocks but have made substantial reductions in those of both crude oil and refined products.

In four years, one oil company reduced its crude oil stocks by 16,750,000 barrels. During that time the crude oil stocks in the United States, including residual fuel oil in California, increased by over 106,000,000 barrels. If this company had increased its crude inventories in the same ratio, they would have been over 30,000,000 barrels more at the beginning of 1930 than they were. At the rate of 25 cents a barrel for carrying charges, interest and costs, this would have added $7,500,000 to the burdens of its stockholders in 1930. This company also decreased its gasoline inventories by 45 per cent.

Stocks of gasoline in the hands of refiners during the past four years at the end of each year averaged approximately 34 days' supply, based on the average daily consumption and exports of that refined product. On the other hand, the storage of crude oil and all refined products averaged around 229 days' supply.

Protection stocks of crude oil and refined products do not seem to be necessary for more than 60 days' demand under the conditions of the last few years and the probable situation for several years to come. Based on the average daily domestic consumption and exports of refined products in 1930, such protection inventories would be 177,480,000 barrels.[2] But assuming that an additional 30 days' stock of crude oil would be more in line with good business practice, then the total inventories of crude oil and refined products would be approximately 250,000,000 barrels for this country.

(*Continued on page* 64)

[1]Editor's Note—1930 Avg. 42.2 per cent—January, 1931 42.08 per cent.

Whatever The Cause of Industry's Ills, Disaster Threatens

THREE weeks ago The OIL WEEKLY reviewed the oil situation in the following editorial and asked the question "Why?"

Verbal answers, letters, etc., have come from all parts of the country offering reasons back of the situation. The opinion of the independent operator generally was divided into two classes, that of:

1. The operator who felt that some of his fellow independents by selling and buying at lower prices than the posted market had brought on ruinous prices.

2. The independent operator who felt that the whole thing is a diabolical scheme designed by the large interests to wreck the oil industry.

The opinion of the large operators, as expressed in letters, conversations, etc., has been to the effect that the present situation is the normal result of:

1. Price cutting on the part of the smaller independents.

2. Belated returns to sanity with reference to the matter of excessive gasoline and crude oil stocks.

3. Large potential oil production available.

THE OIL WEEKLY is not inclined to agree wholly with any of the opinions rendered. Some of them undoubtedly touch things that have been distinctly contributing factors.

IN expressing an opinion on the factors that have led to the present situation, we desire first to say that THE OIL WEEKLY is not partisan in the matter; that we have genuine friends whose friendship and opinions we respect, both among the ranks of the Standard Oil group, the other large companies and the independent operators. We do not believe that the present situation is due to any conspiracy on the part of any group to demoralize the industry and crush competition.

But we do feel that, whatever the causes which have lead to the present situation, the result is liable to prove disastrous to the industry and that the situation could easily mean destruction to the average independent operator. We believe that the independent operator has a place in the general oil picture and that factors which would eliminate him could easily spell ruin to the larger companies as well.

THE OIL WEEKLY believes that the present situation is the result of fear, of panic, on the part of a number of those men whose positions of leadership in the oil industry should cause them to weigh more carefully their actions than some of them have weighed them. Panic listens to no reason but frequently is the father of action which precedes, rather than follows, thinking.

The present situation is, from a standpoint of statistics and economics, not an impossible one. It is not a situation, from an actual supply and demand standpoint, to warrant prices obtaining even before the most recent drastic cuts. Any economist, presented with curves on daily production, of crude stocks, of gasoline stocks, and retail prices prevalent before March 1, would find it difficult to reconcile these curves with the crude price curve obtaining the last week in February. It is only fair to say, however, that during the past 14 days the retail gasoline price curve has shown a big downward trend.

THE OIL WEEKLY has believed in proration, or

WHY?

(Reprinted from The OIL WEEKLY, March 6, 1931)

IN August, 1929, the daily crude oil production of the United States was 2,973,450 barrels per day.

The price of 36 gravity Mid-Continent crude oil at that time was $1.45.

As a result of heroic efforts on the part of oil producers toward proration and curtailment, the daily crude production had been cut on February 21, 1931, to 2,165,250 barrels, a decrease of 808,200 barrels.

During 1930 22,467,000 barrels of crude oil were taken from storage and 62,129,000 barrels of crude oil and 16,927,000 barrels of gasoline were imported from foreign countries.

During the period from August, 1929, to February, 1931, the retail gasoline market was not materially lowered. Indeed, in some sections it showed an increase.

Yet on February 20, 1931, the crude oil market in the Mid-Continent had dropped to 95 cents a barrel for 36 Gravity oil.

Many are saying that this reduction in the crude oil market is poor pay for the efforts toward curtailment and proration that have been made.

Summarizing the figures with reference to production decrease, crude oil storage decrease and comparing them with the crude oil price decrease, *The* OIL WEEKLY is led to ask:

"WHY?"

rather most of its editorial staff and its publisher has so believed, although there have been doubters in our ranks.

A member of our staff has been an active member of the Texas proration committee, his time and the expense of the work being gladly given by THE OIL WEEKLY. But we believe that proration should have some reward. We believe that an industry has the right to save itself from destruction —that salvation is not unlawful, that self-preservation is as safe a rule for industry as it is for the humanity dependent upon industry.

Recent price cuts have apparently taken away the reward of sincere proration effort—we will go further—it has apparently taken away the reward of genuine proration and curtailment success. Nobody can deny that proration has been successful in achieving a goal. Maybe it was not perfect—maybe some operators profited at the expense of others, but a reduction of more than 800,000 barrels per day in daily production forms most tangible results.

East Texas of course presents a situation fraught with further danger to the oil industry. If the rest of the state is to be prorated, of course East Texas should be. That is the way we have felt about it—and we believe that action should have been taken before now. But we believe that proration in East Texas will have hard sledding now, with the price cut as it was.

The president of Standard Oil Company (Indinana) says in a telegram to the Governor of Oklahoma that 100,000 barrels per day of distress oil is invading his territory at less than the posted price. The president has his figures, no doubt, to prove his statement—but if we had been guessing, we certainly would not have guessed them that high. We have been told that until very very recently North Texas or West Texas were the disturbing elements—that independent refiners and purchasers of oil there were responsible for the price cut which was posted by the majors in January and the cut before that. So far as we could figure the amount of "distress oil" going to such independents was not more than 15,000 barrels a day—a drop in the national bucket, yet it broke a national market in effect.

UNDOUBTEDLY the large potential has created a state of mind bordering on panic but if potential, a vast mysterious something that nobody can put a rein on, is to be allowed to crash the market, then there is no efficacy whatsoever in proration.

To the man who would say that the oil industry has been tampering with the law of supply and demand by curtailment, we would answer that the Anglo-Persian Oil Company has had for years a potential in Persia that would make any American field look like a worn-out pool and yet by controlling its production simply to the limit of its pipe line facilities this Persian oil has not been allowed to be a menace to the market.

What will the result of the present situation be? If the price cuts were punitive, will they be successful? Will the low prices effectually reduce the amount of oil which will come from East Texas? Most people that we have talked to doubt it. However, though East Texas is an important factor, it like most important factors, is liable to over emphasis. Will a peak of 350,000 to 400,000 barrels a day, or larger be obtained there? Will it run to the million mark as some excitable people have ventured? Of course it is dealing in guess work, but if we made our guess, we would name a peak a great deal lower than a half million barrels a day. If it goes that high, we doubt the ability to move it.

THE OIL WEEKLY believes that one of the most serious things confronting the oil industry as a whole is dangerous legislation, generated in panic and prejudice, and passed in passion, which will affect the oil business for a generation to come. Surely those who are charged with the responsible leadership of the oil industry will not make a mistake here.

Already the storm clouds are gathering on every oil producing state's horizon. These storm clouds say definitely that we must return to a rule of reason or the industry will be subjected to a rule of unreason perhaps greater than that from which we have suffered from.

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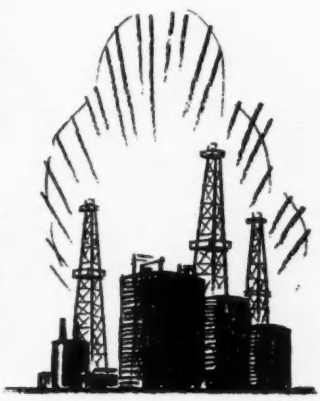

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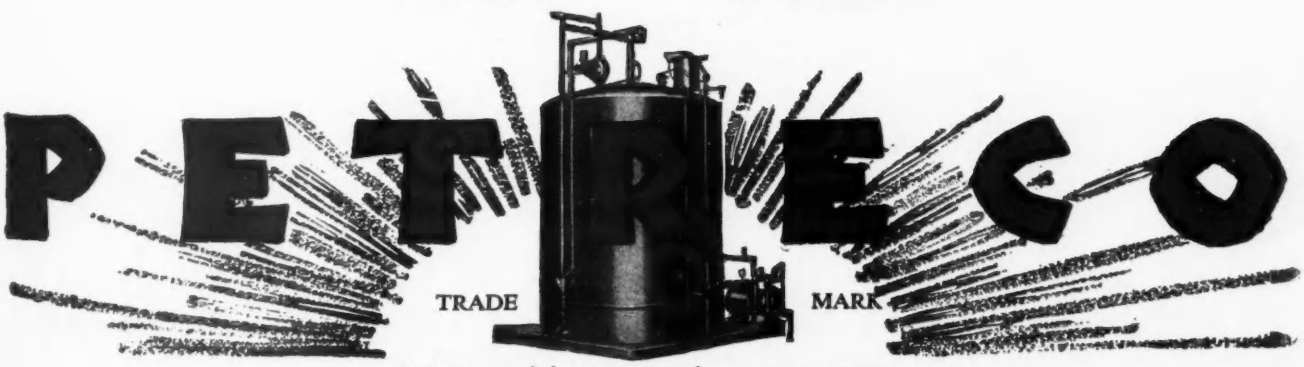

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KNOWING THE HOLE SAVES PLUGGING BACK COSTS

(*Continued from page 25*)

Buckbee caused much more alarm than ordinarily would have been the case. Quoting exactly from an issue of THE OIL WEEKLY which gave an account of Superior Oil Company's trouble in these wells, we find that:

Survey Vindicated

"Superior Oil Company's Wardman 4 and 5, previously reported as having been plugged back to 4000 feet, have been plugged back to 1250 feet. The 11¾-inch water strings were pulled above the Meyer zone. These wells reached the 6000-foot level in their rush toward the Buckbee zone, but had to be plugged back when a survey showed them to be extremely crooked."

A survey of one of these wells showed it to be about 65 degrees from horizontal, or 25 degrees off plumb. Cores taken from the wells showed a pitch which could not have existed under normal circumstances. The original plan was to plug back to some joint just below 4000 feet, in an effort to save the water strings, but the idea was abandoned and the higher level became the objective. Even the huge loss of hole and time was a saving over abandonment of the holes and skidding of the rigs. The plugging back of the two wells was an unusual coincidence and placed the company behind in the race for the Buckbee zone, but the decision to back up came after it was agreed that the chance of completing the wells was not worth the risk involved. Wardman 4 had been drilled to 6082 feet and Wardman 5 to 5890 feet.

The Texas Company had an interesting experience in drilling one of its wells at Santa Fe Springs, during the original rush for the Clarke zone. Through a misunderstanding, the hole was not surveyed before cementing a string of casing over the Meyer zone at 4140 feet. The casing was run and set over what was supposedly the Meyer zone. Later an acid bottle was dropped and the hole proved to be off 44 degrees. It was obvious that the bottom of the hole was much nearer the surface than the tape had indicated, and just as obvious that the cementing point was too high. The plugging back operation was very expensive, due to the string of casing previously cemented. A careful survey showed that the hole started wandering at 1000 feet and the well was plugged back to this point. The casing was not pulled but was milled through at the top of the plug. After going out of the casing, the drill soon picked up a shoulder and a new and straighter hole was started. The well was drilled to 7900 and completed with little trouble. The Texas Company usually exercises care in surveying, this crooked hole having resulted from a misunderstanding.

General Petroleum Corporation was very successful in plugging back operations at Santa Fe Springs, having been able to save several holes without abandonment. One of these, Santa Fe 240, was drilled to 5327 feet and showed indications of crookedness. The acid bottle was run until it was determined that plugging back to 4215 feet might save the hole. A string of 13⅜-inch casing had been cemented over the Meyer at 4200 feet and every effort was made to save this casing. A simple plugging back operation was employed and a new hole started from 4215 feet. After drilling 200 to 300 feet cores showed that the drill persisted in drifting back to the old hole.

The hole was finally shot with 100 pounds of 80 per cent nitro-glycerine at 4300 feet. A total of 250 sacks of cement was pumped into the hole and drilling resumed. Subsequent tests showed the hole to be in good condition and there was no further tendency to drift toward the original hole. This well was deepened to 8000 feet and finished as a good producer.

Union Oil Company also saved much time at Santa Fe Springs through plugging back of various crooked holes. One of the most unusual instances of these plugging operations involved two wells, one of which was being drilled and one which had been producing for some time. While drilling Bell 58 at 5067 feet, a sudden loss of circulation pointed to trouble. At the same time, Bell 41, a producing well, went off production. It was soon evident that Bell 58 had been drilled into Bell 41. Bell 41 was immediately plugged back to 5067 feet and circulation was obtained through both wells—the mud going into one and coming out of the other.

Bell 58 was shut down until Bell 41 could be repaired. A smaller string of casing (6⅝-inch) was run in Bell 41 and cemented at 6295 feet. The well was then cleaned out to 6850 feet, a liner run and again placed on production. The plugging back had enabled the company to establish proof immediately that Bell 58 had drilled into the producing well, which had originally been completed in the O'Connell zone at 6865 feet.

The plugging back and straightening of Bell 58 proved a difficult task. After Bell 41 had been repaired, a whipstock was run to 4988 feet in Bell 58. Drilling was resumed with the view of losing as little hole as possible, but Bell 41 was drilled into again at 5067 feet. A 6⅝-inch by 89-foot whipstock was cemented with the top at 4927 feet. The hole was drilled to 5000 feet and 50 sacks of cement pumped in to hold the whipstock in place. After drilling to 5065 feet, circulation was lost again and the well shut down for a month while Bell 41 was being repaired. Failure to prevent the drill from Bell 41 again resulted in the temporary loss of the producer.

Bell 58 was later cleaned out to 4960 feet and a cement plug set at 4772 feet. A flared shoe was used at 4445 feet and rotated rapidly with little pressure to find a shoulder which would change the course to a line more nearly vertical. A cement plug was placed between 4763 feet and 4500 feet. A nine-inch by 52½-foot whipstock was set, with the top at 4448 feet, but the drill kept going back into the old hole. The hole was plugged to 4400 feet, but it was not until a flared shoe was used above a concrete plug at 4165 feet that the hole was placed in condition for successful deepening. Salvaging of Bell 41 and successful completion of Bell 58 were boosts for plugging back.

Associated Oil Company successfully plugged back Dewenter 8 at Santa Fe Springs, although the loss of hole was not great. The hole was found to be off vertical by 16 degrees at 3420 feet. A survey showed a deviation of only four degrees at 2833 feet. The hole was plugged back with cement, and through rapid rotation and slight pressure on the drill a new hole was started from a shoulder. The new hole showed a deviation of only one degree at 3000 feet. The loss of time was only a fraction of that which would have been recorded in abandonment of the hole. Associated Oil Company was successful in plugging back with cement, and also used lead wool with good results.

Although Santa Fe Springs did not have a monopoly on the interesting plugging back jobs, that field was developed in the deep zone about the time well surveying came into its own. It was here that the feasibility of plugging back on short notice was often demonstrated. It was not unusual to plug back with cement and start a new hole with a small loss of time.

Long Beach, Playa del Rey and several other fields have added much to the practice, which has become a necessity in the development of any field.

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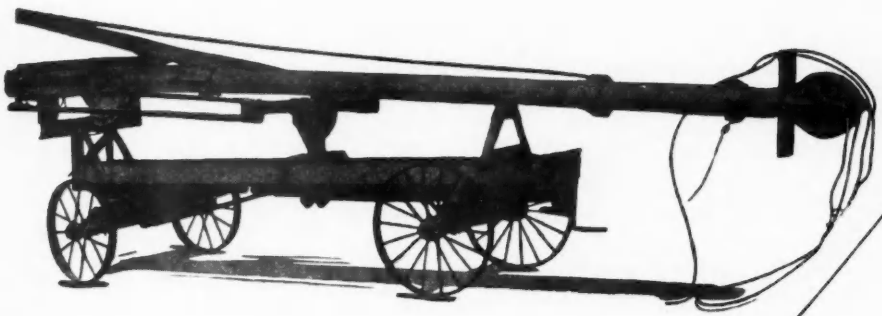


Mast will safely handle 20,000 pounds when properly guyed. This is equivalent to 3000 feet 2-inch tubing filled with water and a string of $\frac{5}{8}$-inch sucker rods, or 2000 feet of $2\frac{1}{2}$-inch tubing filled with water and a string of $\frac{3}{4}$-inch sucker rods.

THE NATIONAL SUPPLY COMPANIES

Practical Interpretation of Core Analysis

By L. S. PANYITY
Geologist and Valuation Engineer

L. S. PANYITY
who presented the accompanying paper before the Petroleum Division, American Institute of Mining Metallurgical Engineers, New York, February 17, 1931

THE inception of this paper may be traced directly to the various discussions of another paper by the writer (*Valuation of Properties in the Bradford District, Petroleum Development and Technology* 1916, *page* 238) wherein certain indefinite beliefs and opinions were emphasized as to the relative importance of total sand porosity and the actual size of the openings between the grains. During the interval of time which has elapsed since the discussions took place it has been possible to study various methods of sand analyses as well as the results that have been obtained under different condition and actual operation in the field.

The purpose of this paper is to indicate the value of screen analysis, especially in areas where repressuring by means of water-flood, air or gas has been resorted to in the partly depleted fields. These results are acquired from the study of sand samples analyzed for porosity, saturation and grain size. They are mainly from the Bradford water-flood area, where a great reliance has been put upon such analyses, and where many data are available. A few sand studies are included from fields other than the water-flood area, in order to indicate the possibilities of screen analysis in any field.

Examples of various conditions are shown by Figures 1 to 7. These show the porosity, saturation and grain-size analyses of submitted cores or drill cuttings. The generally accepted methods of delineating such sand studies on cross-section paper, known as "core charts" has been employed; with the exception that a method of representing grain size has been evolved which is believed to be the best adapted for this purpose. It differs from the block diagrams generally used, by the employment of a linear section, as will be seen from any of the core charts. Percentage of grain size is represented by the subdivision of a given distance, where the total length represents the whole sample of rock chunk, while the subdivisions indicate the percentages of grains of the different sizes that will pass through the various sieves, through which the samples of crushed sand is sorted to determine the size and amount of the components that make up the aggregate. Thus it will be seen, on Figure 1, under the heading of Grain Size, that the first sample is composed of grains of the following sizes: 16 per cent through 120-mesh sieve; 33 per cent through 150-mesh; 25 per cent through 180-mesh; 26 per cent through 200 mesh; a total of 100 per cent. A minus sign is placed before the largest size of sieve through which the samples have passed; thus 16 per cent through –120 indicates that 16 per cent of the grains have passed through the 120-mesh sieve but would not pass through the next smaller size used. This method makes it possible to represent on one line the porosity, saturation and grain-size analysis of any sample of rock.

This paper deals with the interpretation of results regardless of the methods employed in the analysis of the rock.

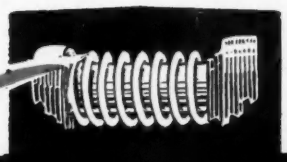
It is suggested that the customary method of indicating oil content as a percentage of the total porosity either be eliminated entirely from reports or core charts, or supplemented by another curve showing the oil content in barrels per acre-foot of sand. Such a curve gives a better picture of actual oil content, and is much simpler for the practical oil man to understand.

This paper places a great value upon the interpretation of screen analysis; the writer feels that it is of the utmost importance and outweighs the prominence generally attached to porosity and saturation analyses. It is not intended that such other analyses be discarded; on the contrary, all of them will lead to a better understanding of the phenomena of repressuring.

Laboratory methods of permeability by means of pressure methods have been avoided in this paper, mainly because such experiments carried on in this laboratory have not led to any satisfactory conclusions. Others may be able to overcome certain physical handicaps connected with this method; such as the use of samples of small size for laboratory experiments and the difficulty of keeping tight contacts between the rock chunks and the apparatus under high pressures.

Although other factors may be involved, the size of the sand grains composing an oil-bearing formation to a great extent determine the permeability of that rock with reference to the flow of water, oil, air or gas through its pores. Probably the largest other factor is the cementing material that holds the aggregates together. The cementing material proper will find its way through the smallest sieve and thus will contribute to the percentage of rock classified as –200 on the chart, and this size has a great bearing on the sand's permeability. Screens used in these analyses are maily those shown on the various charts, and the writer believes that these sizes are sufficient for practical purposes.

Figure 1—A typical Bradford flooding sand from a locality that is considered to be among the best in the field. The porosity range is between 11 and 18 per cent and shows good saturation. The grain-size range is between –120 and –200. The screen analysis shows it to be a fairly even-grained sand body, with a slight tightening at 1635 feet. A general increase of the finer grains will be noted downward. This writer would consider the ideal flooding sand



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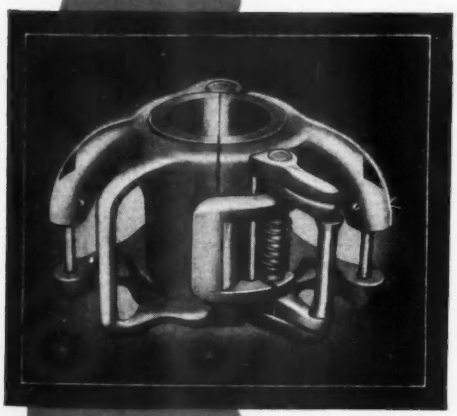

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in Bradford to be composed of about 25 per cent –120; 33 per cent –150; 20 per cent –180, and 22 per cent –200; porosity about 16 per cent and good saturation. This chart comes close to these figures, and such a sand should flood normally, and take about one to 1½ barrels of water per foot of sand per day at depths averaging 1500 feet, which is about the average for the field. The uniformity of the entire column indicates that the entire sand body will flood evenly regardless of the various changes in porosity. The columnar section on this chart shows the shale breaks as percentage of the sand body. This method is frequently employed, especially in cases where samples are obtained by methods other than the percussion drill or the diamond drill. The chart has been based on the writer's method of sand sampling; which has been used to a very large

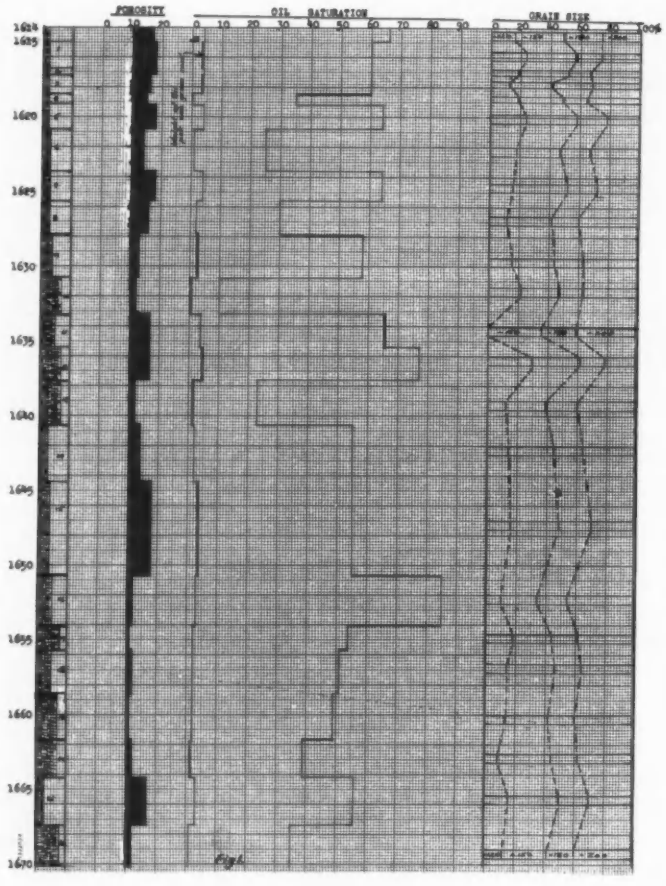


FIGURE 1

extent in the Bradford field. Attention is called to the line showing the weight of the oil in a unit chunk of rock. This line is to the right of the porosity line and the figures from which it is plotted are calculated in every analysis, although not generally placed on the charts. It is the weight of the oil found per unit weight of rock. In this case the plotted figures are the weight of oil found in one gram of sample. Thus at 1620 feet one gram of the crushed sample contained 0.04 gram of oil. This figure is derived by noting the loss of weight of the total sample after solving for oil with carbon tetrachloride. By means of proportion the corresponding amount of oil per gram of rock is obtained. A close observation shows a striking similarity between the porosity line and the weight of oil

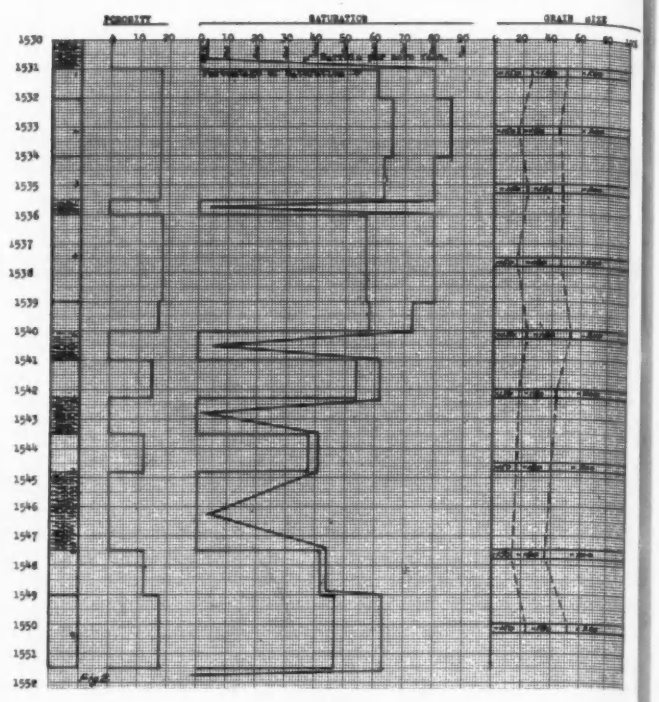


FIGURE 2

line. In almost every instance an increase of porosity shows a corresponding increase in the weight or amount of oil found in a given sample of sand. The writer believes that a continued study of this relationship will enable us eventually to determine whether the oil found in the sand on analysis is the natural oil content, whether it is a "banked-up" condition, or whether the oil has been forced in. Much information will be required before this contention may be verified. It is mentioned as a possible line of study. The screen analysis must be considered in this connection, owing to the fact that loss of oil during samp-

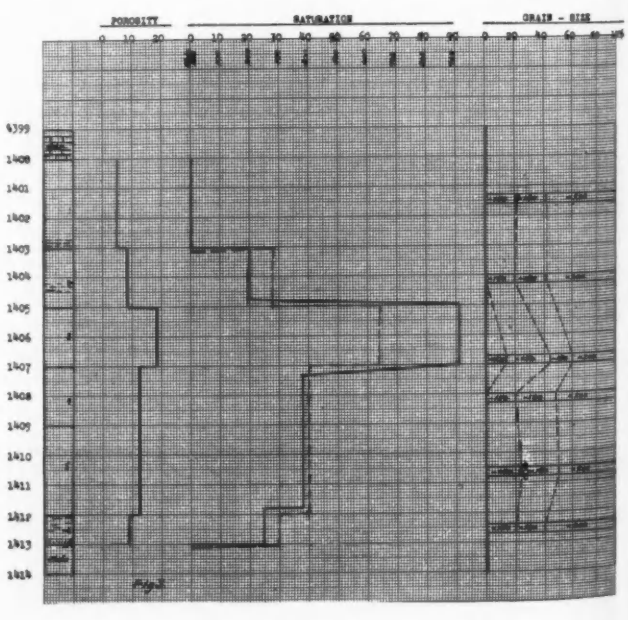
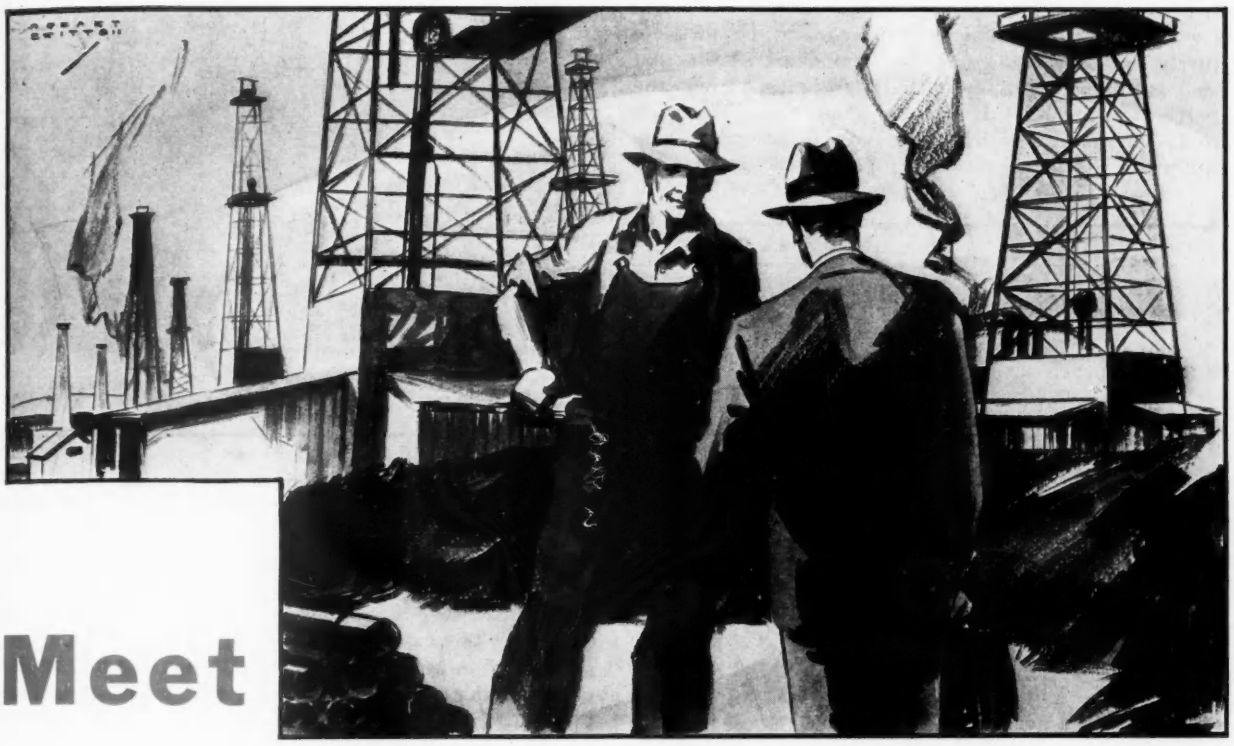


FIGURE 3

ANNOUNCING
Another New East Texas Store



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ling will vary with the grain size of the sand as well as the viscosity of the oil.

Figure 2 also shows the analysis of the Bradford sand, in a different part of the field. The porosity range is similar to the sample shown on Figure 1, which is between 12 and 18 per cent. On the basis of porosity, the sand would be considered similar for flooding purposes. The sands, however, are not flooding alike, as such a porosity study would lead us to believe. The answer to this problem is entirely in the screen analysis. The chart shows that the sand is composed of grains not larger than -150, and the percentage of –200 is greater than that shown on Figure 1. This indicates that this sand will not take water so readily but will need a considerable added pressure. In

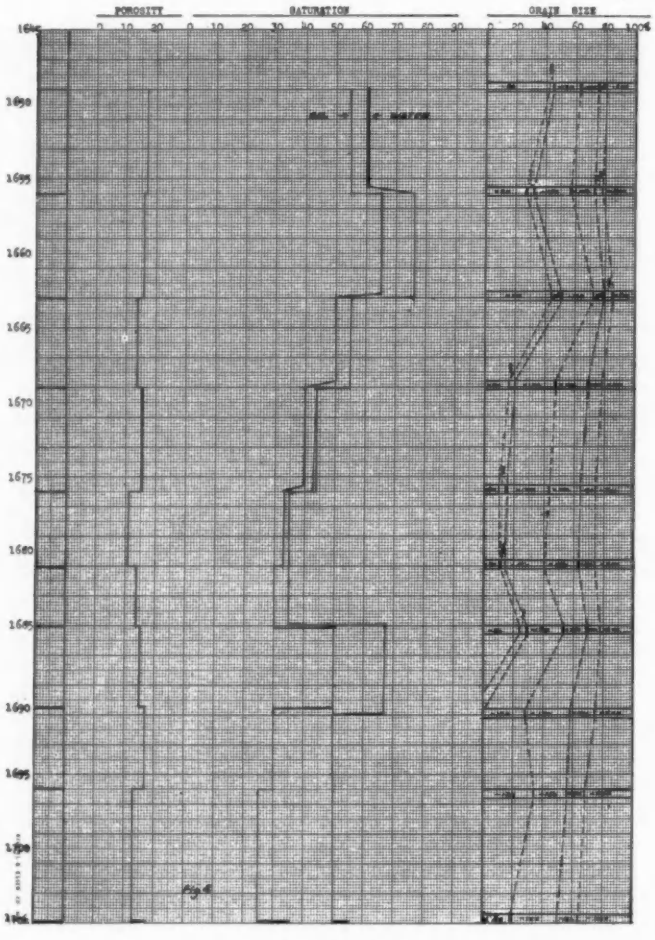


FIGURE 4

order to estimate the pressure necessary, the best procedure at this stage of development is to flood the well and note the water intake; then pump water into the sand until the average for the total sand available is from one to 1½ barrels of water per foot of sand per day. The pressure needed may be estimated from the use of constants and empirical formulas. Figure 2 also shows the saturation according to the suggestion made earlier in this paper. Under the heading of saturation, the line to the left indicates the saturation in terms of percentage of the porosity, while the line to the right shows the amount of oil reserves in the sand in barrels per acre foot of sand. In this case the increase or decrease of the percentage of saturation is accompanied by a similar increase or decrease in oil content per acre foot. This is not always the case, as these

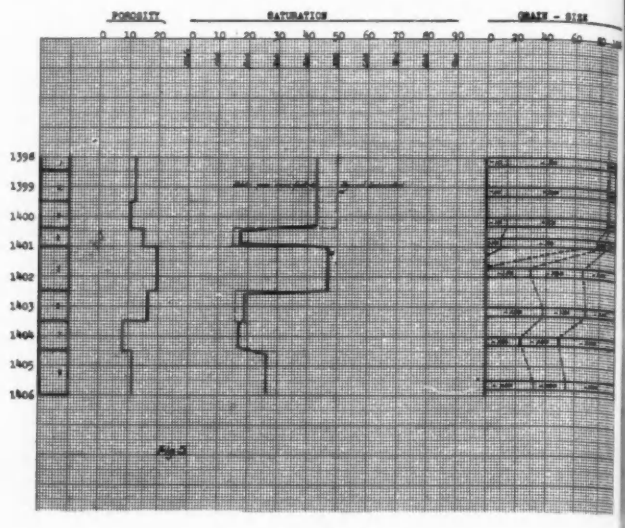


FIGURE 5

lines often criss-cross. Some of the following figures indicate such conditions.

Figure 3—Analysis of Bradford sand, showing a condition that is most difficult to handle under present flooding methods. The center portion of the sand formation is composed of large grains, indicating an open sand body in the center. In this case the increase in grain size is also accompanied by an increase in porosity. Such conditions are frequent in the Bradford sand, but not in all sands, and determinations of possible permeability on the basis of porosity will invite danger, whereas such prediction on the basis of grain size will not entail such risk. Sands of this kind are handled best under the so-called delayed flooding method, which will assist the water pressure in the various parts of the sand body to come to an equilibrium. Attempts at packing off such portions of the sand when they occur in the center of the formation have not been successful.

Figure 4—The actual sand thickness is greater than the chart shows. The lower portion is omitted, but it is very similar to the portion shown from 1690 to 1705. Attention is called to the sudden change shown by the screen analysis at a depth of 1690. Above this point, the grain-size analysis shows it to be composed of a rather coarse sand; sizes as

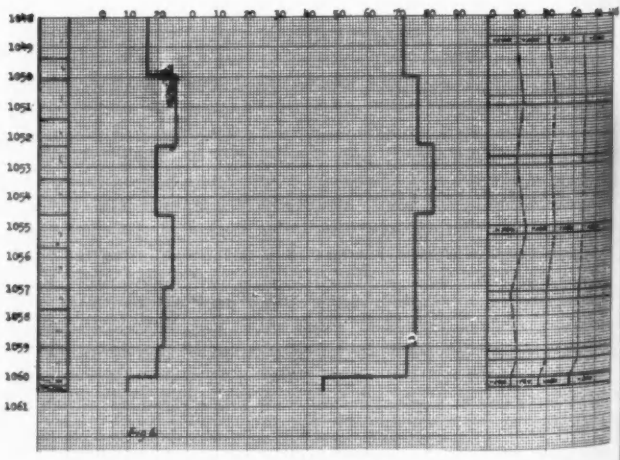


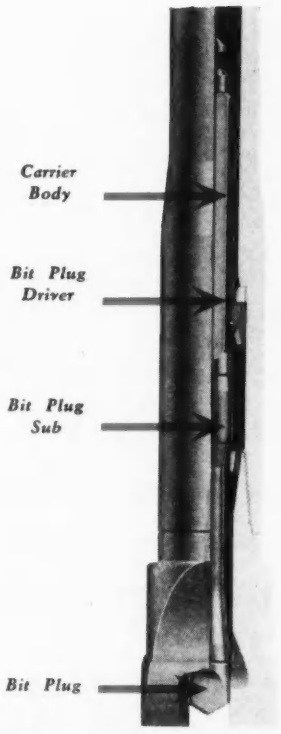
FIGURE 6

REED'S BARRETT-ROBISHAW DRILLING-CORING BIT » »

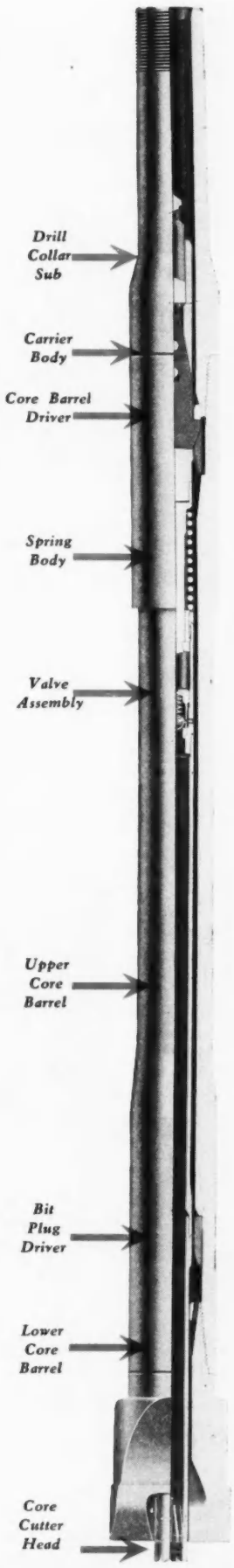
. . . has proven its real value in the field . . . for it eliminates 75% to 90% of the time heretofore consumed going in and out of the hole to take a core . . . for it reduces wear and tear on drilling equipment due to pulling drill stem . . . for it decreases tendency to pass up changes in formation . . . for it permits the building up of good hole wall due to infrequent necessity of pulling pipe . . . for it decreases possibility of blowout in coring gas-bearing formations . . . while permitting of maximum rotation and circulation. . . . All of which summed up in one statement . . . means the taking of a core . . . at any time . . . and at any depth . . . while drilling . . . without pulling drill stem.

Used on more than 325 wells . . . has drilled more than 500,000 feet of hole . . . and successfully recovered more than 14,000 cores.

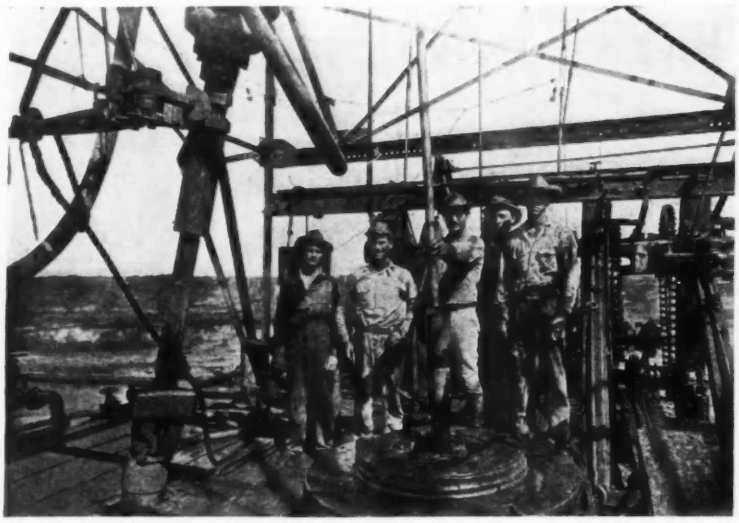
View of drilling bit now provided with replaceable blades



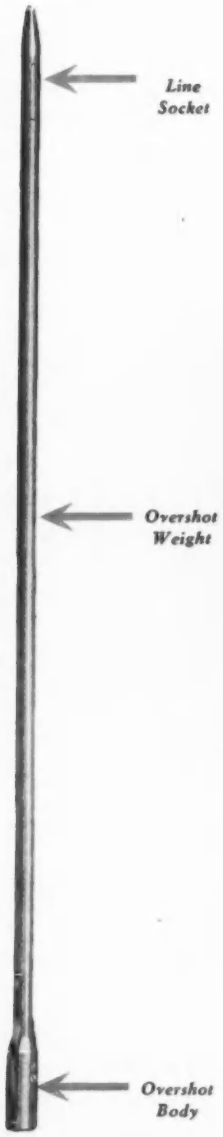
Reed's Barrett-Robishaw Drilling-Coring Bit with Bit Plug in drilling position.



Reed's Barrett-Robishaw Drilling-Coring Bit assembled complete ready for coring



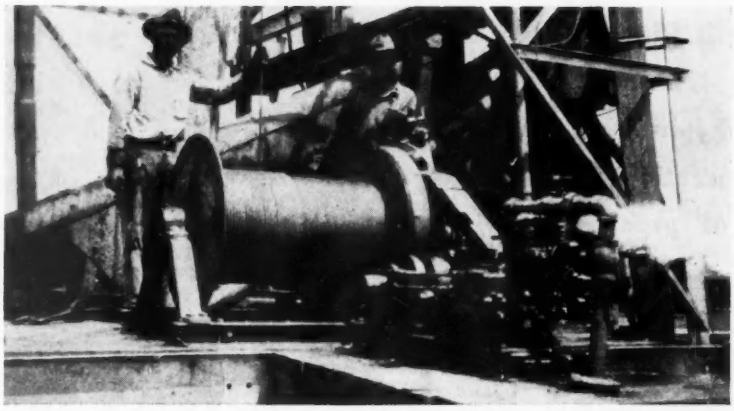
Coming out of hole with five-foot core from depth of 7618 feet, taken in one hour. This photograph taken on Karona Oil Company's Jerry Riley No. 6 at Refugio, Texas.



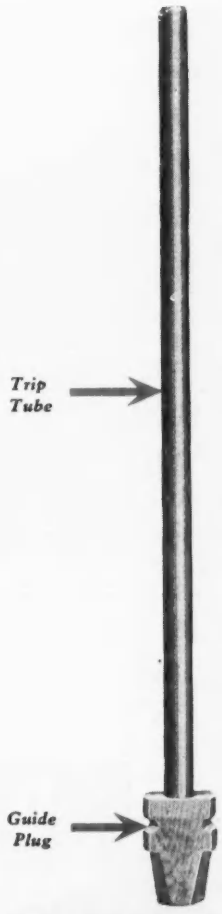
Overshot Assembly complete for Reed's Barrett-Robishaw Drilling-Coring Bit

A motorized installation for Reed's Barrett-Robishaw Drilling-Coring Bit. This tool may be installed on any type of rig, with any type power and almost any drive, may be effected, for auxiliary reel.

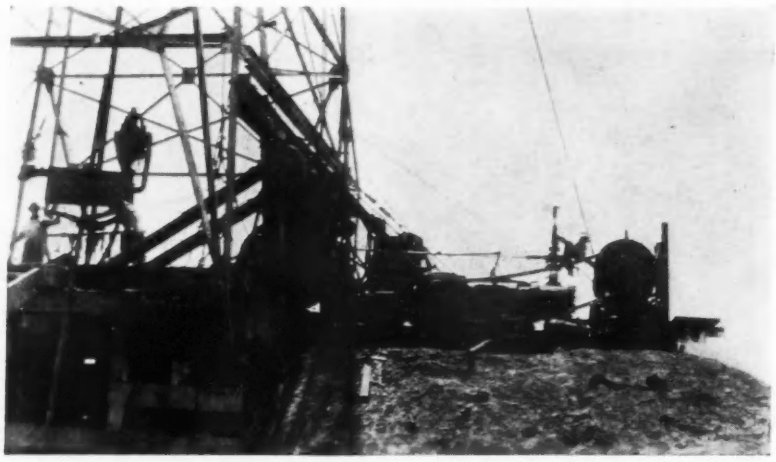
Extracting core from Reed's Barrett-Robishaw Core Barrel on a well in the Gulf Coast. Due to core barrel preceding cutting blades, cores are uncontaminated and true samples of formation are always secured.



One of the installations particularly adaptable to Gulf Coast conditions. Auxiliary reel with 7000-foot line capacity driven by a 15 H. P. twin engine.

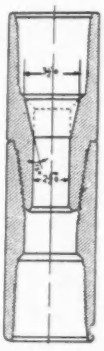


Trip tube assembly for Reed's Barrett-Robishaw Drilling-Coring Bit



A direct drive reel installation for Reed's Barrett-Robishaw Drilling-Coring Bit, which is proving very popular. Note position of reel behind engine.

Particularly adaptable for the testing of new and untried formations in unknown fields, or for the proving of geologic data, Reed's Barrett-Robishaw Drilling-Coring Bit has cut coring costs as much as 75%. This tool is available for operation through 3½", 4½", 5-9/16" or 6⅝" A. P. I. Drill Pipe when equipped with A. P. I. or Acme thread tool joints, and also for operation through like sizes of pipe equipped with Reed Full Hole Tool Joints when larger and longer cores are desired.



When 4½" A. P. I. Tool Joints with 2¼" diameter hole are used—15° taper is reamed as shown

When A. P. I. or Acme tool joints are used an entrance taper through pin end of the tool joint is required and is effected by reaming, as here illustrated.

The inside diameter of the pin of Reed Full Hole Tool Joints being the same as the inside diameter of the upset of the pipe on which tool joints are used, permits of the taking of larger and longer cores without in any way affecting the strength of joint or string of pipe. Write for bulletin.

Reed Full Hole Tool Joints will increase drilling efficiency regardless of tool used at the bottom of the hole. More slush volume; less friction.

REED ROLLER BIT CO.

HOUSTON LOS ANGELES OKLAHOMA CITY NEW YORK CITY

Gulf Coast and Mid-Continent distributors of **MARTIN-DECKER Products.**

high as –80 appear in considerable amounts. At 1690 the larger grains disappear suddenly, and a typical Bradford sand occurs below this point. The porosity range above and below the 1690 point show no decided variation. The saturation, if any, is greater above the 1690 point than below it. In so far as porosity and saturation are concerned, the two portions of the sand are quite similar. This analysis is from the thick sand area of the Bradford field. It is from the area which the writer believes to have been erroneously called the "gas-streak" area. It is true that portions of the field near the Knapps Creek Dome produced considerable amounts of gas. The portion of the sand above the 1690 point will take a very large amount of water. The reason for this, as advanced by various authorities and oil producers, has been credited to the presence of this so-

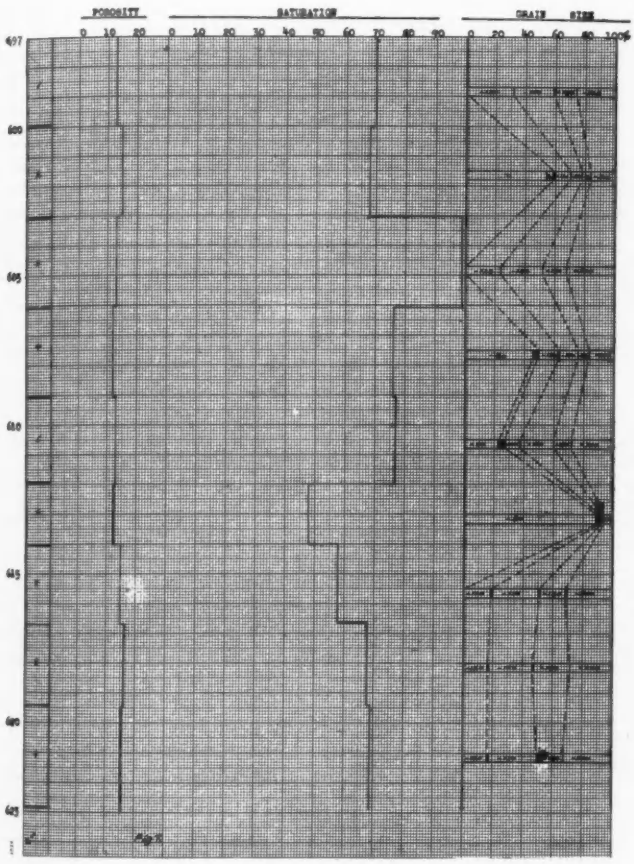


FIGURE 7

called former gas streak; it is not supposed to have had any oil in it, therefore it permits the flood waters to travel through it rapidly and in great volumes. The writer takes exception to this theory on the following grounds. The presence of gas along the dome is granted, however similar conditions are found where the gas conditions are not known to have been abnormal. The analysis shows the saturation in this portion of the sand body to be similar to that of most other sands in the Bradford field, however, the permeability of the sand as indicated by the large grain size is such as to classify the portion of the sand above 1690 out of the category of the typical Bradford sand, and it is the main reason why such wells often take over 1000 barrels of water per day. The recovery of oil from these open streaks must be handled in some different manner, as flooding operations as practiced will not recover them, and a great amount of oil is lost.

Figure 5 shows an analysis of a core taken outside of the Bradford flood area, in a sand other than the Bradford sand where flooding has been attempted with some degree of success. Formerly the production in the area was from wells of the gusher type. The core analysis (Figure 5) indicates two separate streaks of sands if studied from the standpoint of screen analysis, while the porosity figures would give us hardly any basis for drawing any line of demarcation between the various parts of the sand. Down to 1402 feet the sand is composed almost entirely of sand grains of the –10 and –20 type, with only a small amount of small-grained sand. Probably the majority of the –180 and –200 accounts for the cementing material. Undoubtedly the former large production came from this portion of the sand. The portion below 1402 feet indicates that the sand condition is very similar to the typical Bradford flooding sand, and undoubtedly the flooding results were obtained in this portion of the formation. A study along these lines previous to flooding would have suggested the packing off of the upper portion of the sand, preventing the flow of water through it and flooding only the lower portion of the sand.

Figure 6 represents the analysis of a sand not in the Bradford field—one of the Venango sands, a uniform sand of high porosity ranging between 17 and 26 per cent. In ordinary circumstances such a porosity would have indicated that conditions were not suitable for water-flooding. The screen analysis shows a uniform sand body, ranging from –140 to –200. This condition was the reason for the recommendation that an attempt at water-flooding would be justified. An experimental five-spot well was drilled and the carefully kept records of water intake, as well as increase in production, thus far have upheld the contention based upon the screen analysis. The water is being taken at the normal rate under a small added pressure, and the production of oil has been on the increase.

Figure 7 is also a chart of a sand outside of the Bradford field and is presented here to show the possibility of great variation in a sand at various horizons. Such variations may hardly be noted from porosity studies alone, but a different picture is had from the viewpoint of screen analysis. With the exception of the portion from 616 feet down, the sand is very irregular and the writer would not recommend flooding operations above the 616-foot mark.

Conclusion

Not only has the Bradford field found difficulties in certain parts, but flooding operations attempted in many of the older fields throughout the country generally have met with little success. Conditions under which these experiments were tried are not known, but it would appear reasonable to expect that a thorough sand analysis along the lines laid down here would have given a better light on the various possibilities. Undoubtedly additional studies along these lines will bring about a better understanding of the movements of oil, water, gas or air through the pores of rocks. The content of this paper is the best judgment of the writer; it is also a more elaborate answer to questions formerly propounded by various authorities as to sand studies, and in a way attempts to prove certain contentions formerly made and referred to at the outset of this paper, that not porosity but the size of the individual pore space is the criterion for and controlling factor in, water-flooding. Similar reasoning may be justified as to gas and air flooding, if it is generally realized that grain size is the largest factor in determining the permeability of an oil-bearing formation.

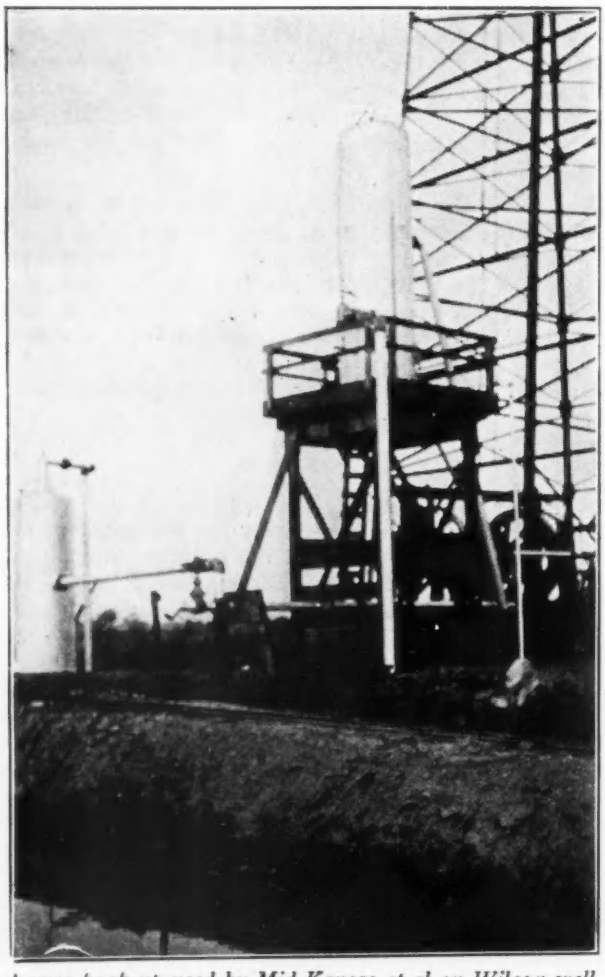
Wewoka—The Second Stage In Seminole Development

By FLOYD SWINDELL
Staff Representative

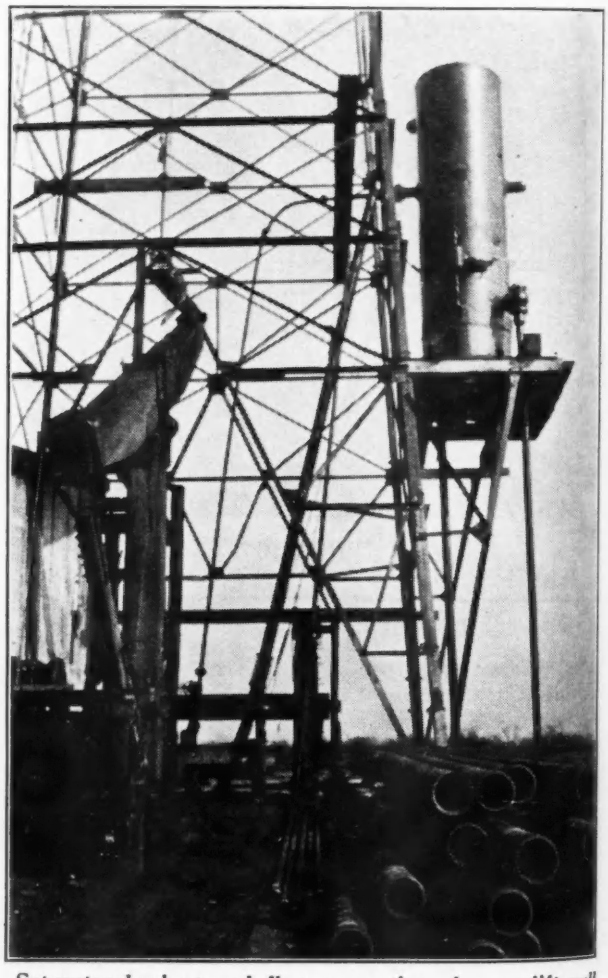
DISCOVERY of oil in several of the smaller structures in the Seminole district might be likened to a battle in which the major offensives have been accomplished and the ground is gone over by smaller detachments to clean out machine gun nests and old trenches. The major pools of the Seminole group have passed beyond the flush stages and are showing all of the signs of old age after several years of intensive drilling and startling discoveries. The clean up is now on.

Minor structural features, some of which were known during the Seminole boom, have come in for much study and drilling during the past year and new production has been obtained in a number of smaller areas. Other minor "highs" will be found productive both inside the area covered by major structures and in the surrounding country. The Wewoka Townsite pool falls within the latter classification. The structure, although a minor feature and apparently destined to cover a very limited area, has attracted much attention both for size of initial production from some of the wells and the rather complicated subsurface condition. The pool has also received a large amount of publicity through the medium of two spectacular fires within the last three months.

First commercial production in Seminole County was obtained in the Wewoka area when, on March 17, 1923, R. H. Smith and associates completed Betsy Foster 1, NW SW NW Section 33-8n-8e, approximately one and one-half miles southeast of the town of Wewoka. This well produced at the rate of 3500 barrels daily from a sand at 3150 to 3157 feet, later named the Smith sand and correlated in



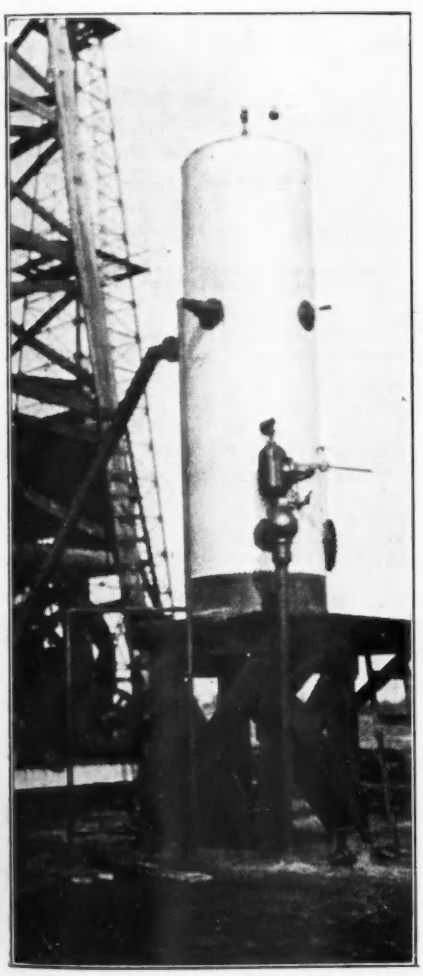
Series hook-up used by Mid-Kansas et al on Wilcox well. Flow passes from the well to the elevated trap and then to the lower trap.



Separator hook-up and flow connections for gas-lift well at Wewoka.

the upper part of the Cromwell horizon. On October 20 of the same year, Magnolia Petroleum Company completed Jones 1, NE SE NW Section 32-8n-8e, about three-quarters of a mile west of the original well. It started producing at the rate of 290 barrels daily from sand at first thought to be the Smith sand. This belief continued until June 26, 1924, when Louis Sykes completed Boggs 1, NE SE NE Section 31-8n-8e, for 1100 barrels in sand at 3160 to 3183 feet. Completion of this well proved the productive sand in Magnolia Petroleum Company's Jones well to be below the Smith sand and separated from it by 50 feet or less of shale. The lower sand was given the name Sykes sand after Louis Sykes although he was not the discoverer.

First production in the Hunton lime was obtained from a sandy phase of the lime at 3873 to 3891 feet in the Dixie Oil Company's John Long 5-A, NW SW SE Section 32-8n-8e, a 50-barrel well. Prior to discovery of the Smith and Sykes sands, gas had been found in the Cromwell structure located about 15 miles north of the town of Wewoka. Subsequent development revealed the Simpson formation to be barren below this structure and several others to the east. Possibilities for commercial production from the Simpson formation were considered very remote at that time. After development of the Smith and Sykes sands had progressed to a point when the structure appeared to be closed on all sides and the productive limits defined, Magnolia Petroleum Company drilled Skinner 1, NWc Section 5-7n-8e, on the south flank of what was then the Smith sand structure. On December 19, 1925, this well started flowing at the rate of 4000 barrels from the Seminole (first Wilcox) at 4074 to 4091 feet. This was a memorable date for the oil industry of Oklahoma. Discovery of the Seminole City, Searight, Earlsboro, Bowlegs, and Little



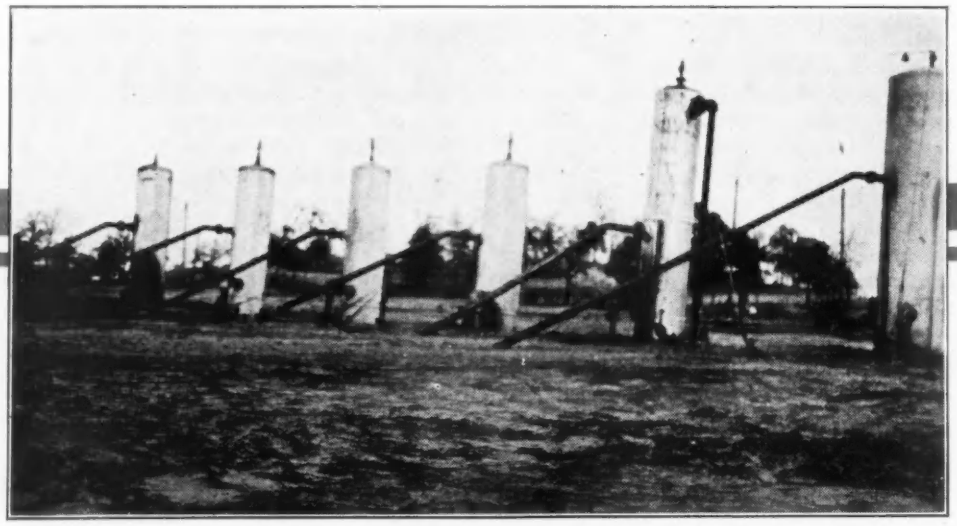
Separator hook-up on a pumping well at Wewoka.

Generalized Geologic Section, Seminole County, Oklahoma*

*Bulletin 40, Pp. 312, Oklahoma Geological Survey.

System	FORMATION		THICKNESS	CHARACTER OF SEDIMENTS
Quaternary	Recent		0-40	Alluvium, sand clay and conglomerate Unconformity
Pennsylvanian	Pleistocene		0-50	Shale, arkosic sand, and conglomerate
	Vanoss formation		250-500	Shale, arkosic sand, and conglomerate.
	Ada formation		0-50	Sand and shale. Thins out northward
	Vamoosa formation		270-525	Conglomerates, sands, shale. Thins southward
	Belle City limestone		0-30	Gray, fossiliferous limestone. Thins northward
	Francis formation		370-500	Shale with interbedded sandstone layers
	Seminole formation Holdenville shale Wewoka formation		800-1000	Shale with interbedded sandstone layers
	Wetumka shale Calvin sandstone		250-300	"Calvin sand series" of well logs. A persistent series of sands extending from the base of the Calvin sandstone to the top of the basal sand of the Wewoka formation.
	Senora formation (?) Stuart shale (?) Thurman sandstone (?) Boggy formation Savanna sandstone (?) McAlester Shale		600-1400	Shale with several variable sandstones including the Earlsboro sand. The Senora, Stuart, Thurman, and Savanna formations probably represented only in southeastern part of county if at all.
	Pottsville	Hartshorne sandstone (?)	0-60	Booch sand of oil fields Unconformity, structural and erosional
		Atoka formation	0-300	Gilcrease horizon of oil fields. Shale, limestone and sandstone. Thins westward. Unconformity, Atoka overlaps Wapanucka.
		Wapanucka: Wapanucka limestone member	0-10	"Cap rock" of Cromwell field. Thickens eastward.
		Wapanucka: Cromwell sand member	0-100	Produces oil in Cromwell and Wewoka oil fields. Unconformity (?)
Mississippian	Caney Formation	Caney shale member	20-600	Bluish gray, fine grained shale overlain unconformably by formations up to Boggy shale.
		"Mayes" limestone member	9-110	Argillaceous, black to brown limestone, Sycamore limestone at base. Unconformity.
	Chattanooga shale Misener sand at base		20-220	Uniform, black shale, thickens southward. Woodford chert of Arbuckle Mtn. section. Unconformity, structural and erosional.
Devonian	Bois d'Arc limestone Haragan shale			Hunton limestone of oil fields. Locally produces oil in weathered zone near top or porous horizons within the formation. Generally not differentiated in wells. Faunal hiatus separates each member below Haragan shale.
Salurian	Henryhouse shale Chimneyhill limestone: Pink crinoidal member Glauconitic member Oolitic member		0-195	
	Sylvan shale		35-100	Gray-green shale.
	Viola limestone (Fernvale)		20-40	White to gray limestone Unconformity
Ordovician	Simpson Formation	Dense lime member	5-50	
		1st dolomite member	30-125	
		Seminole sand member	0-80	Main producing horizon. "First Wilcox."
		2nd dolomite member	15-100	
		Wilcox sand member	500	Locally productive. "Second Wilcox."

NOTE: The formations below the Francis formation known only from well logs.



Six separators in series serving one well. The 5 3/16-inch flow lines shown coming into separators tap the well through a manifold arrangement on the derrick floor.

River pools followed in rapid succession in 1926 and 1927. During the week ending July 30, 1927, daily average production from these five pools was in excess of 500,000 barrels, the highest daily production ever obtained from any single area in the United States.

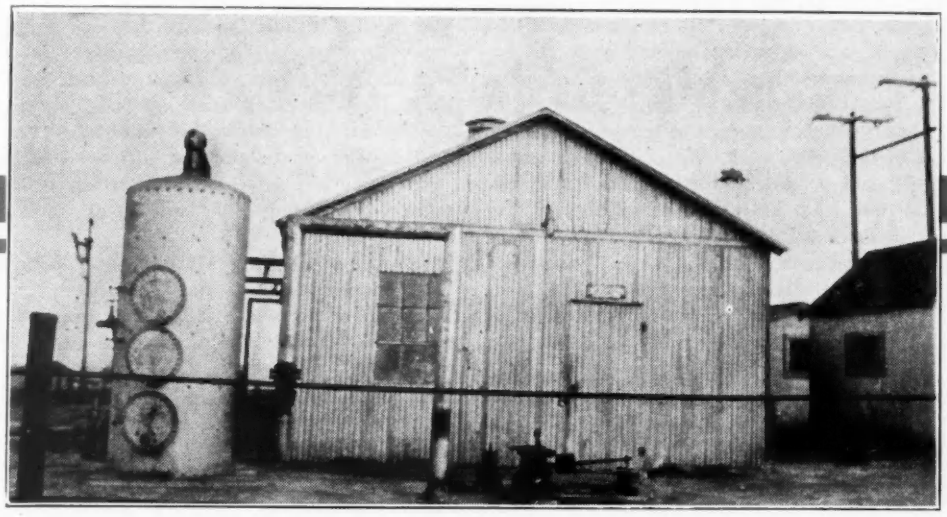
With a record of this kind to face, recent pools in the area have seemed but a drop in the bucket, although any one of several of the pools discovered since that date would previously have been considered sensational.

Subsequent development in the Wewoka pool brought discovery of two other producing areas in the Wilcox horizon and on November 4, 1930, a fourth was found when Deep Rock Oil Corporation completed Whitworth 1, NW SW NE Section 30-8n-8e, on the north flank of the old pool. This well came in flowing at the rate of 2537 barrels daily from Wilcox sand topped at 3899 feet and penetrated to a total depth of 3922 feet. It was later deepened to 3956 feet. Prior to this date Deep Rock Oil Corporation had purchased a small Cromwell sand producer on the A. B. Douglas 10 acres, NE SW NE Section 30-8n-8e, first location east of the Whitworth lease. Minor amounts of oil had been obtained from the Cromwell sand in other parts of Section 30 as early as September, 1924, and Mid-Kansas Oil & Gas Company, W. R. Ramsey et al have been producing B. F. Davis 1, NW NE NW Section 30-8n-8e, since May, 1925, pumping from the Cromwell sand. Present development is confined to Section 19 and

WELL RECORD SECTION

Operator—	Farm	Well No.	Location	Elevation	Commenced Drilling	Completed Drilling	Wapanucka Lime
Ligon & Todd	Townsite (Wilson)	1	SW NW NW NE	915	11-12-30	1-28-31	None
Deep Rock	Smith	1	SE NW NE	904	5-27-30	6-20-30	3220
Deep Rock	Smith	2	SW NW NE	914	10-22-30	1-14-31	No Rec.
Deep Rock	Douglas 10 acres	1	SE NE SW NE	917	10-18-29	5- 8-30	3245
Deep Rock	Douglas 10 acres	2	NE SW NE	914	11- 3-30	1-22-31	No Rec.
Deep Rock	Whitworth	1	NW SW NE	923	9- 5-30	11- 4-30	None
Droppleman et al	Townsite (Wilson)	1	SW SW NE NE	898	6-12-30	8-15-30	3268
J. E. Crosbie	Townsite (Robinson)	1	NW SW SE NE	909	11-12-30	3- 5-31	3242
Pace Petroleum	Townsite	1	SW SW SE NE	892	11-16-30	2-24-31	3240
						O.D. 12-17-30	
Deep Rock	A. B. Douglas 50 acres	1	SE SW NE	922	7-31-30	9-14-30	3221
Deep Rock	A. B. Douglas 50 acres	2	SW SW NE	925	10-22-30	1- 7-31	2890
Deep Rock	A. B. Douglas 50 acres	5	NW NW SE	896	1-13-31	2-19-31	2990
Deep Rock	A. B. Douglas 50 acres	3	SE SE NW	901	12-14-30	1-24-31	2880
Deep Rock	A. B. Douglas 50 acres	4	Twin to No. 3	917	12-16-30	2-19-31	No Rec.
Mid-Kansas et al	B. F. Davis	2	NE SE NW	927	10-14-30	12-31-30	3020
Mid-Kansas et al	B. F. Davis	3	SE NE NW	853	10-22-30	1-14-31	2910
Mid-Kansas et al	B. F. Davis	4	NW SE NW	906	12-23-30	2-24-30	3000
Mid-Kansas et al	B. F. Davis	5	Twin to No. 4				
Deep Rock	A. B. Douglas 60 acres	1	NE NE SW	877	10-26-30	11- 8-30	....
Deep Rock	A. B. Douglas 60 acres	2	Twin to No. 1	875	10-22-30	1-28-31	2988
Deep Rock	A. B. Douglas 60 acres	3	Twin to No. 2	876	1- 3-31	2- 9-31	No Rec.
Burke-Greis	Henshaw	1-A	NW NE SW	857	10-22-30	1-14-31	3074
Burke-Greis	Henshaw	1-B	Twin to No. 1-A		1-25-31		
Droppleman et al	Lack	1	SW SE NW	867	12-11-30	1-28-31	2965
Droppleman et al	Lack	2	Twin to No. 1				No Rec.
Burke-Greis	Henshaw (OWDD)	1	Twin to No. 1-A			O.D. 2-17-31	Original

[1] Repetition of Viola indicated at 3861'.
[2] Cement failed on 6⅝" making 5 3/16" string necessary; 120' of 4¼" liner set at 3880.
[3] 293' of 5 3/16" liner set at 3247'.
[4] Repetition of Viola indicated at 3842'.



Deep Rock Oil Corporation's compressor station with hydrogen sulphide washer in left foreground. Gas is run through the washer before delivery to the compressors for gas lift purposes.

30-8n-8e. Five wells are producing from the Wilcox horizon and the remainder from Cromwell or higher sands.

Geology

Stratigraphy—Surface formations of the Wewoka area consist of shales and interbedded sandstones of the Francis and Seminole formations of Pennsylvanian age. From this point downward the section is similar to that encountered in the Seminole City pool which has been described in detail by Leverson.[1]

Structure

Opinion is divided as to the subsurface structural condition in the pool. Faulting seems to have played a major part both in formation of the structure and in the accumulation of oil and gas. Evidence points strongly toward the existence of a subsurface fault striking roughly north-south through or near Deep Rock Oil Corporation's A. B. Douglas (50 acres) 2, SW SW NE Section 30-8n-8e. It is possible to contour both on top of the Cromwell and Wilcox sands without recognizing a faulted condition but such mapping shows an abnormal east dip. Evidence presented through study of well cuttings in addition to the fact that the pool is located in an area where an echelon faulting has been recognized, leads the writer to believe that a fault exists.

One of the important questions to be decided is whether or not a repetition of beds actually exists. In drilling with rotary

30-8n-8e, WEWOKA

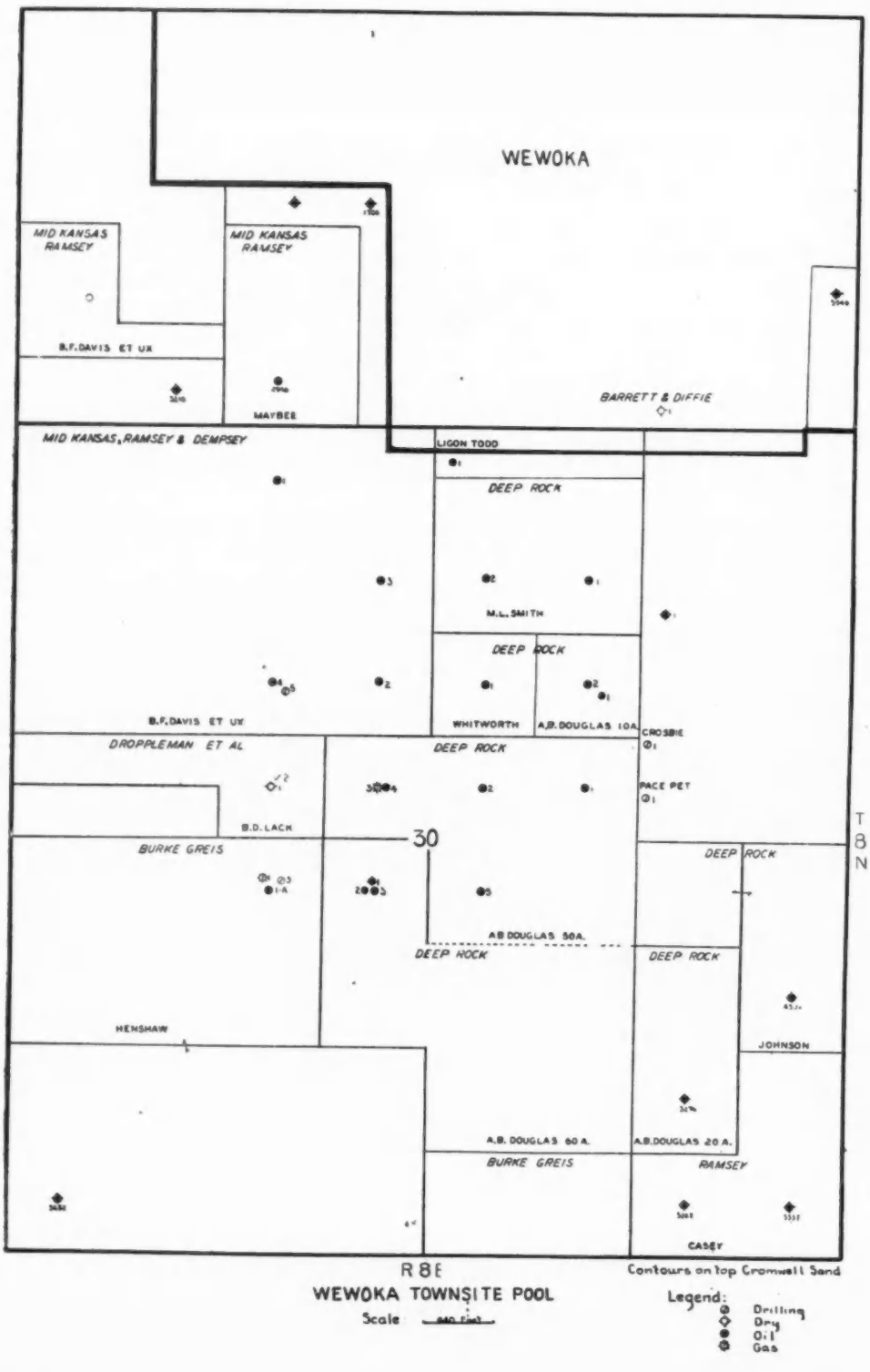
Cromwell Sand	Viola Lime	Wilcox	Casing Record — Sks. Cmt.	Casing Record — Sks. Cmt.	Casing Record — Sks. Cmt.	Total Depth	Initial Production
3185	4053	4123		6⅝"-3930		4142 P.B. 3300	Cromwell 120
....	....	....	15½"-26'- 30	8¼"-3217-200		3220	107 Swb.
2998	3789[1]	3907	12½"-30'- 50	6⅝"-3814-500	5-3/16"-3822[2]-100	3958	1100
3321	....	....	12½"-800'	8¼"-2400	6⅝"-3096[3]	3368	230 Swb.
3330	4142	4210	12½"-42'- 65	8¼"-3928-150	6⅝"-Pulled	4210 P.B. 4190	Hunton 31
2930	3790	3899	15½"-37'- 60	8¼"-3860-200		3956	2537
3335	....	....		6⅝"-3171	5-3/16' liner-3272	3367	Dry
3305	4203	No Record		8¼"-4000		4240	Dry
....	....	....		8¼"-3296		3318	100 Swb.
3281	....	....	15½"-40'- 70	8¼"-3218-200	6⅝"-91' Set 3283	3300	157 Swb.
2892	3775[4]	3932	12½"-30'- 45	6⅝"-3795-500	5-3/16"-3050	4028	2100
3120	....	....		6⅝"-2990		3212	960
2967	....	....	No Record	6⅝"-2970		3002	Gas 81 million
2995	3850	3930		8¼"-3870		3952	10,725
3030	3876	3970		8¼"-3856		3982	16,462
2980	3745	3828		8¼"-3790		3835	14,351
3077	3880	3971		8¼"-3911		3983	4469
....	....	....				Building rig	
....	....	....	12½"-45'- 45	6⅝"-1000-150		1484	Dry
3078	....	....	12½"-38'- 65	8¼"-3048-150		3133	8280
3080	4090	4201 hfw		6⅝"-3192		Crom. 4215 P.B. 3300	4820
3138	....	....	No Record	8¼"-3134		3167	4950
....	....	....				Drg. 3796	
3070	....	....		8¼"-3070		3144	1950
No Rec.	3870	....		8¼"-3905		R.U.S.T.	
ly a gas well 12 million feet at 1435-1438			10'-1445	8¼"-1510	6⅝"-2900	D.D.2904-2921	100

tools the possibility of error through mixed samples is greatly increased. However, more than one well has reported repetition below the Mayes lime, a fact which lends credence to the reports. This deformation apparently is related to the enechelon system recognized in the Wewoka and Cromwell pools and in a number of the pools farther west in the general Seminole region. Levorsen[2] is of the opinion that the original deformation occurred after the end of the Mississippian period, probably during Pottsville time; that it was fundamentally a gravity fault deformation with associated folding; that the surface fault beds as now observed were formed when a westward tilting developed the present Plains Monocline of the Mid-Continent; and that this tilting would cause horizontal differential movement along the buried fault trends.

Evidence so far available seems to fit this theory remarkably well. Cuttings taken in the zone along the probable fault are reported to be considerably mixed. One possible explanation of the apparent condition is based on the assumption that there is in fact repetition of beds. Original deformation by gravity faulting threw the beds to the east downward some 300 or 400 feet. Subsequent horizontal forces, acting along the fault plane and approximately at right angles to it, caused a merging or mixing of beds along the fault plane.

Drilling Methods and Equipment

Practically all wells have been completed with cable tools after setting the water string with rotary. The equipment does not differ from that in general use in other pools of the Seminole region. Because of the several sands from which production may be obtained, casing practice differs slightly from that in general use in the Mid-Continent. Usually 8¼-inch casing is set and cemented with rotary after the last known water sand has been drilled and a point near the top of expected production has been reached. Size of Wilcox production in several of the wells has led to the practice of testing that sand and in so doing to leave the hole so that it can be plugged back to test Cromwell sand. When this procedure is followed open hole is carried with rotary tools after setting surface pipe. The Wilcox sand is tested and if found dry the hole is plugged back with cement to some point below the base of the Cromwell horizon but well above an intermediate water sand which has been found between the two horizons. The plugging back is done by the Halliburton process through plain end drill pipe in the same manner as the tubing method of cementing. After plugging to or near the base of the Cromwell the drill pipe is pulled and a water string set with the Halliburton process. At the time of cementing the water string, which in this case may also be the producing string, the Cromwell sand is protected by mud which must be kept in the hole to prevent blowouts. This procedure eliminates ripping 8¼-inch casing which has been set below the Cromwell in a number of tests. One well in the north end of the pool is now producing through a rip in the casing, usually a most unsatisfactory condition. When 8¼-inch casing is cemented near the top of the Wilcox horizon,



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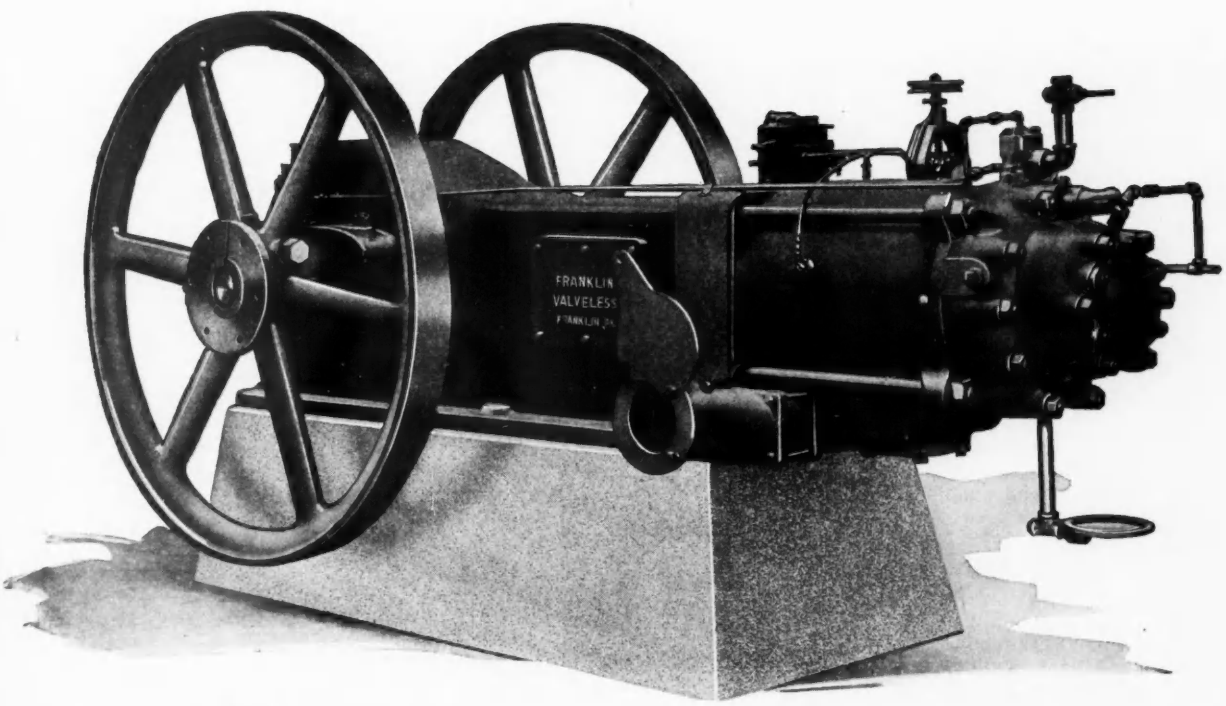

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enough cement is used to fill behind the pipe to point either up to or including the Cromwell sand. Calculations are made on the basis of 8¼-inch inside diameter with 8⅝-inch outside diameter casing in an 11-inch hole. One sack of cement when set in the hole fills approximately 4.3 liner feet of annular space between the outside of the casing and the walls of the hole. Inspection of the well record tabulation will give an idea as to the methods of protecting or leaving open for testing in the upper sands. One sack of cement set in the hole between 6⅝-inch inside diameter and seven-inch outside diameter casing in an eight-inch hole, fills 13.4 linear feet of the annular space. However, some of the 6⅝-inch strings have been set in 11-inch hole and one sack of cement would fill only 2.8 linear feet of the annular space. No consideration is given irregularities in the walls of the hole except that such irregularities are known to exist in certain types of formation and sufficient cement is used to reach the desired point behind the casing.

Oil and gas in varying amounts have been obtained in the Hunton lime, Booch, Cromwell, and First Wilcox sands, and a showing of oil has been obtained in the Gilcrease sand. The lower or Second Wilcox sand has been tested dry and production from the Hunton lime, Booch and Gilcrease sands is not in commercial quantities. The Wilcox sand contains little gas along with the oil and flowing life of wells in this horizon will be relatively short.

Lack of sufficient gas within the sand has made swabbing necessary. This condition makes one certain type of well head especially adaptable, since all heads are not so designed that they can be readily removed to permit insertion of a swab. An all purpose head is in use on the wells of one operator. It is so designed that a 10-inch by six-inch swage nipple can be screwed into the top for flow connections. Connections coming off of the swage nipple are flanged near the well so that the assembly can be easily and quickly removed. The upper flange is removed by loosening and removing eight bolts which fit into slots in the upper and lower flanges. When the upper part of the assembly has been removed tools or swab pass through the head without difficulty. The head also is adaptable to use in high pressure areas where lubrications must be resorted to.

Four recent completions are now on the pump. Deep Rock Oil Corporation's Smith 1, A. B. Douglas (10 acres) 1 and 2, and A. B. Douglas (50 acres) 1, all of which are producing from Cromwell or Hunton, had little gas and were pumping within a short time after completion. Electric lines carry the power for all purposes except for drilling, which is done with steam. General Electric and Oil Well 15 to 35 horsepower, 440 volt, three phase motors are in general use at the pumping wells using General Electric and Trumbull enclosed type switches and Allis-Chalmers units with Tex-rope drive. Separation of oil and gas is done with Smith, National, and Hanlon-Waters separators of various sizes.

Oil from the Cromwell horizon averages 38 to 39 degrees A. P. I. gravity and that from the Wilcox sand ranges from above 39 to 41 degrees A. P. I. Reference to the production tables shows that the Wilcox sand has yielded in excess of 425,000 barrels since its discovery in November, 1930, and that the Cromwell horizon has produced more than 65,000 barrels from wells completed within the last six months. This production is not representative of the actual ability of the sands to produce oil since rigid restrictions have been placed on production through proration regulations. The sands have a thickness which would permit production per acre comparable to that obtained in some of the pools of the Greater Seminole group. Had gas lift been applied continuously during the early life of Wilcox wells, as was the case in most of the Seminole pools, the picture would have been quite different. However, as has been mentioned heretofore, the productive area of both horizons apparently will be confined to a relatively small area and no startling amount of total ultimate production can be expected.

Water Conditions

As compared with other pools in the district the oil-water contact is high on structure. On the south end of the pool water was encountered in the Wilcox at 3325 feet below sea level, on the north end at 3208 feet below sea level, on the east at approximately 3335 feet, and on the west the contact is not defined although it is logical to believe that it will not be far above or below the minus 3325 contour. Water level in the Cromwell horizon is correspondingly high on the east side and has not been well defined in the other directions.

[1] Levorsen, A. I., "The Geology of Seminole County," Oklahoma Geological Survey, Bulletin 40, Vol. III, July, 1930.

Production Wewoka Townsite Pool
(Wilcox Sand)

Lease	August	September	1930 October	November	December	January	1931 February*	Total
Deep Rock, Whitworth 1	....	....	....	65,639	36,036	4,039	18,032	123,746
Deep Rock, Douglas (10 acres) 2	....	....	....	....	....	3,584	1,757	5,341
Deep Rock, Douglas (50 acres) 2	....	....	....	....	6,965	3,640	21,412	31,017
Deep Rock, Smith 2	....	....	....	....	....	9,184	609	9,793
Deep Rock, Douglas (50 acres) 4	....	....	....	....	....	....	11,522	11,522
Mid-Kansas, Davis 2	....	....	....	....	23,681	28,287	None	51,968
Mid-Kansas, Davis 3	....	....	....	....	....	45,493	106,365	151,858
Mid-Kansas, Davis 4	....	....	....	....	....	....	35,588	35,588
Total Wilcox sand production	....	....	....	65,639	66,682	94,227	195,285	421,843
(Cromwell Sand)								
Deep Rock, Douglas (10 acres) 1	3,920	2,975	2240	1,561	1,421	None	None	12,117
Deep Rock, Douglas (50 acres) 1	....	....	....	1,323	511	None	None	1,834
Deep Rock, Douglas (60 acres) 2	....	....	....	....	....	5,551	19,467	25,018
Droppleman et al, Lack 1	....	....	....	....	....	....	1,680	1,680
Droppleman et al, Wilson 1	....	....	....	....	....	....	1,085	1,085
Burke-Greis, Henshaw 1	....	....	....	....	2,723	7,616	10,276	20,615
Pace Pet., Hamilton 1	....	....	....	....	....	....	105	105
Total Cromwell sand	3,920	2,975	2240	2,884	4,655	13,167	32,613	**62,454

* Does not include last five days production in February.

** Does not include production from the Mid-Kansas, Davis 1, NW NE NW Section 30, which produced at the rate of about four or five barrels daily throughout 1930 and was producing at this rate on March 1, 1931.
Deep Rock, Smith 1, produced 1211 barrels of oil from a sand above the Cromwell between October, 1930, and January, 1931.

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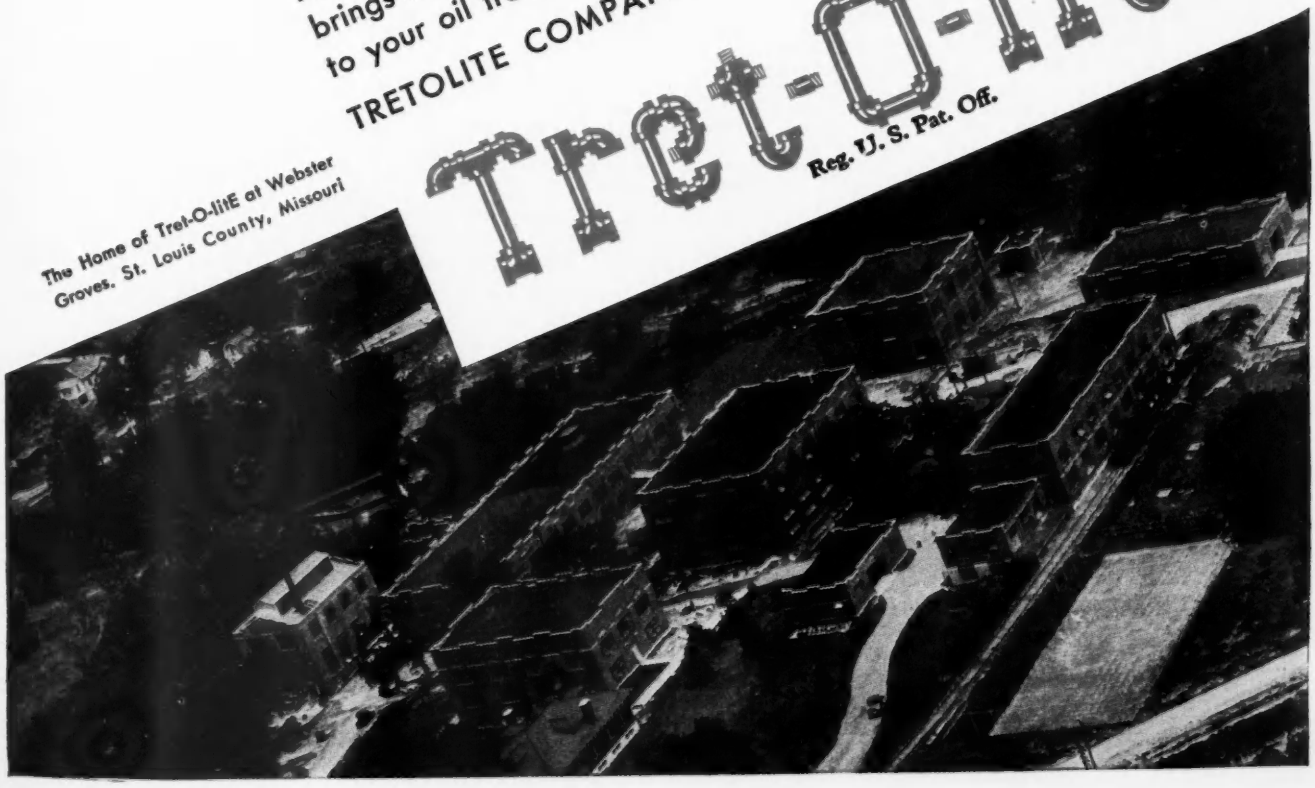

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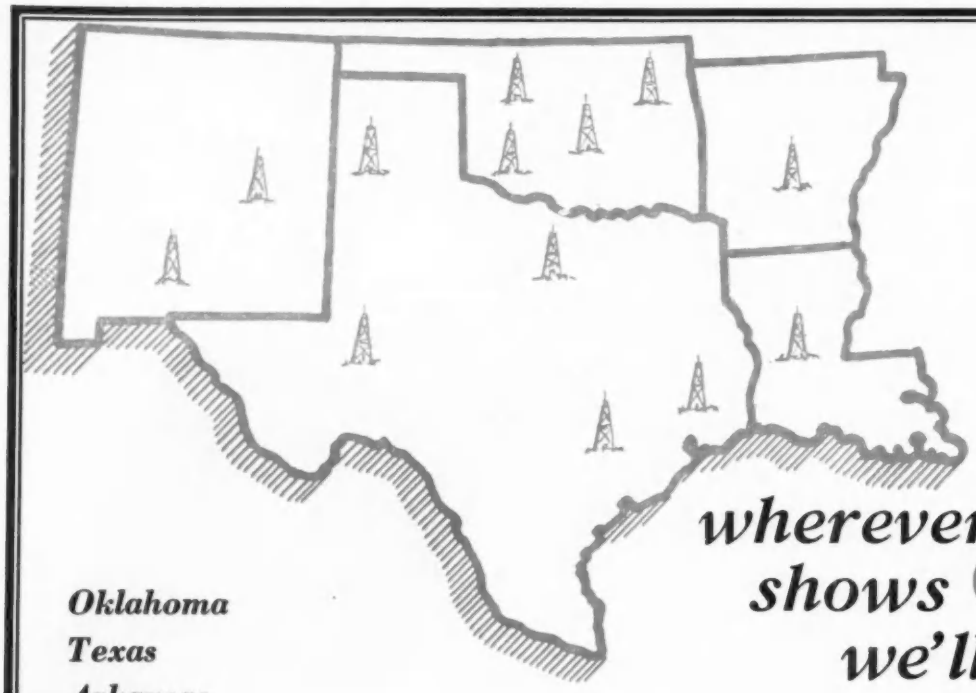

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Markets • Production • Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

Production Takes Upturn Under Oklahoma Influence

East Texas is the big disturbing factor in the crude market. In the production column, however, it remains in the abstract—its influence is largely its potential. Other sections are more concrete in their performance and low prices are no deterrent to mounting of crude oil. As evidence, the American Petroleum Institute's estimate of daily production in the United States for the week ending March 21 shows the average up 77,500 barrels daily. Of this increase 62,300 barrels is shown as having been added in Oklahoma; Texas, 11,800 barrels. Other increases were in Eastern and Rocky Mountain areas, up 3400 barrels each, and California where the increase was 4000 barrels. Downward trends were evidenced in Kansas, North Louisiana and Arkansas, while in the Gulf Coast, where the price has not been recently disturbed, the decrease was 4200 barrels.

East Central Texas increased its daily output by 8250 barrels to 138,900 barrels, indicating curtailment of the older fields in that district is being maintained and that, while hearing is in progress at Austin to determine whether or not (or what) proration will be placed upon the Rusk-Gregg County area, limited handling facilities are effective in holding back the flood. In the meantime important pipe line projects which will increase the movement from the district are being held in abeyance awaiting legislative action which the builders of the proposed lines contend will be inimical to their interests. However additional racks for rail shipment are being built as development in the new fields continues at a rapid rate. Influences outside of the oil industry are being brought to bear in the hearing before the railroad commission at Austin, with the citizenship generally of East Texas, with organized legal representation, opposing oil producers from other sections of the state in the move for proration. The outcome of such a hearing is problematical, and doubly so with the political situation at Austin in its present state.

Taking Potentials

In Oklahoma about 25,000 barrels of the increase was from Oklahoma City where the average for the week was 149,000 barrels. The rest of the state's increase was occasioned by open-flow tests in the Greater Seminole area, taken to determine production for further action by the corporation commission. In the meantime further action in the matter of proration awaits the conference scheduled to be held in Washington.

So far as prices are concerned, it is now accepted generally that East Texas will determine the scale in all parts of the Mid-Continent and probably for two years to come.

Approximately 95 per cent of the refining capacity of the United States reporting to the American Petroleum Institute, for the week ending March 21, show runs to stills were 16,790,000 barrels, an increase from the previous week of 589,000 barrels, or an approximate consumption increase of 84,000 barrels daily. That shipments of gasoline from the plants was not even up to the previous period is revealed in that stocks of that commodity were increased by 937,000 barrels to 46,758,000 barrels.

Empty Storage in Oklahoma; Kansas Proration Law Passed

Apparently the crude oil market in the Mid-Continent has gathered its support to await the impulse of whatever the East Texas development does to the market structure as a whole.

The Oklahoma Corporation Commission last week decided not to hold the schedule March 25 hearing, which has been set to determine further disposition of the output at Oklahoma City. The fact that an attempt is being made to work out an agreement between the oil producing states through a meeting in Washington March 30 was the reason for postponing the hearing scheduled for March 25.

Another round of taking potential production in the Oklahoma City field will be started April 1. The Corporation Commission put this into its order March 17 as follows:

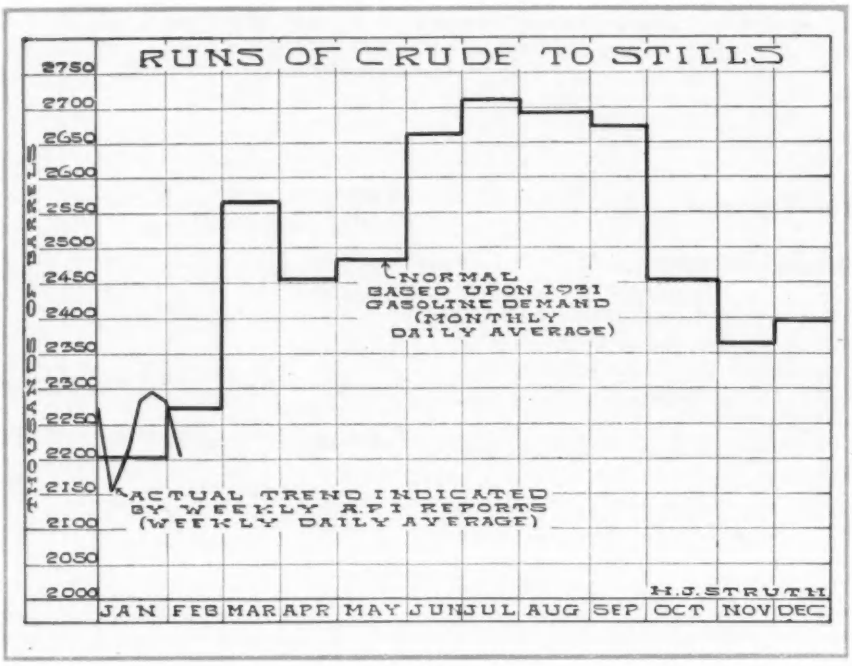
"From and after April 1, 1931, no producer in the Oklahoma City field shall be permitted to produce any oil from any well until after having taken a potential of said well on or after April 1, as provided in the orders now in force, except such oil as may be produced in the actual taking of such potential."

After much bickering on both sides, proration came under legal status in Kansas, when Governor Woodring signed the Carpenter bill. Proration in Kansas will be under the supervision of the Public Service Commission, which will have authority to make rules and regulations to prevent waste according to its ordinary meaning and including underground waste, surface waste, waste of gas energy and waste incident to the production of crude oil.

Producers in the Ritz pool met in Tulsa the day the Kansas governor signed the Carpenter bill and recommended that the pool come under proration. The details are to be worked out later but it was recommended that a 12-hour potential for the field be taken the first week in April. It also was recommended that all wells started after March 17 be allowed a 24-hour potential flow, after which the wells be shut in for 30 days. After the 30-day period wells will be allowed to produce in keeping with the regulation adopted for the field.

It is significant that storage is being emptied in several Oklahoma fields. In the Seminole area withdrawals from storage last week were 7000 barrels daily in excess of additions. The Burbank field, with total storage of 11,700,000 barrels has only 7,400,000 barrels filled. The available storage over the state is expected to play the major part in taking care of the output at Oklahoma City.

MARKET SECTION



Bottom Seems Reached in California Gasoline War

The crude price structure occupied the center of the stage in California during the week ending March 21, with two reductions being announced. The first reduction was announced effective March 15 by Union Oil Company, affecting almost entirely the refinable crudes, with the low gravities escaping cuts of any consequence.

Kettleman Hills crude, ranging around and above 40 gravity, with gasoline content of about half, is now posted at 60 cents for 40 gravity and up, while higher grades (not average), in Los Angeles Basin ranges from 67 to 70 cents. For instance, Long Beach and Santa Fe Springs crude, 27 gravity, is posted at 67 cents, which covers most of the oil produced in these two fields. Playa del Rey crude is posted at 56 to 57 cents for 20 to 25 gravity, which is about 10 cents under other close by fields.

This was the second time that Union Oil Company had taken the lead in reducing the price of crude oil in California, Standard Oil Company of California formerly having set the pace at all times. Standard Oil Company met Union Oil Com-

Crude Runs to Stills, Gasoline Stocks and Gas and Fuel Oil Stocks

Week ending March 14, 1931

(Figures in barrels of 42 gallons)

District—	Potential Capacity (Reporting) Total	Potential Capacity (Reporting) Reporting	Per Cent	Crude Runs to Stills Total	Crude Runs to Stills Daily Average	Crude Runs to Stills Per Cent Operated	Gasoline Stocks at Refineries	Gas & Fuel Oil Stocks
East Coast	612,700	612,700	100.0	3,483,000	497,600	81.2	8,399,000	7,390,000
Appalachian	141,300	132,500	93.8	572,000	81,700	61.7	1,590,000	1,102,000
Indiana, Illinois, Kentucky	390,800	381,000	97.5	2,012,000	287,400	75.4	5,421,000	3,039,000
Oklahoma, Kansas, Missouri	461,100	412,200	89.4	1,739,000	248,400	60.3	3,346,000	3,734,000
Texas	809,000	743,500	91.9	3,890,000	555,700	74.7	7,535,000	7,980,000
Louisiana-Arkansas	266,600	262,000	98.3	985,000	140,700	53.7	2,029,000	2,319,000
Rocky Mountain	150,100	139,700	93.1	307,000	43,900	31.4	1,860,000	852,000
California	898,500	887,600	98.8	3,213,000	459,000	51.7	15,641,000	100,942,000
Total Week Mar. 14	3,730,100	3,571,200	95.7	16,201,000	2,314,400	64.8	45,821,000	127,358,000
Total Week March 7	3,730,100	3,571,200	95.7	15,205,000	2,172,100	60.8	45,789,000	127,428,000
Total March 15, 1930	3,660,900	3,494,400	95.5	17,782,000	2,540,200	72.3	*54,217,000	*137,002,000
The Texas and Louisiana Gulf Coastal Figures Shown Below are Included Above in the total of their respective districts.								
Texas Gulf Coast	529,500	529,500	100.0	2,985,000	426,400	80.5	6,292,000	5,748,000
Louisiana Gulf Coast	147,500	147,500	100.0	655,000	93,600	63.5	1,820,000	1,286,000

* Revised due to change in California.

MARKET SECTION

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

State—	Indicated Demand First Quarter 1931	Economic Limit First Quarter 1931	Daily Average Last Week	Daily Excess Last Week	Daily Average Since January 1	Daily Excess Since January 1
Arkansas	54,000	52,000	47,300	—4,700	49,701	—2,299
California	547,000	500,000*	531,900	31,900	530,675	30,675
Kansas	109,000	105,000	109,800	4,800	110,466	5,466
Louisiana	73,000	71,000	109,800	4,800	110,466	5,466
Oklahoma	510,000	465,000*	66,700	—4,300	69,272	—1,728
Texas	739,000	644,000*	572,100	107,100	479,180	14,180
Balance of U. S.	236,000	225,000	207,250	—17,750	207,112	—17,888
Total	2,268,000	2,062,000	2,268,050	206,050	2,134,425	72,425

* Allowable.

pany's reduction four days later, many operators having their hopes raised by the delay, as some had hoped that Standard Oil Company would stick to the former prices.

The gasoline price war probably had much to do with the lower crude prices, as gasoline in Southern California is selling at retail at 7½ to 10½ cents, tax paid, put in your tank. This gives a net price of 4½ to 7½ cents, without tax. The differentials range from two to four cents, so it can be seen that refiners are receiving 2½ cents up for their product, delivered to the service stations. It is claimed in some instances that the lowest mentioned price product is being sold by the retailer at a profit of one-half to one cent profit. Even under such circumstances, the refiner is only receiving 3½ cents for a product that costs more than five cents to manufacture.

Many of the refiners are selling gasoline at 7¼ cents, tax paid, at the plant in tank and trailer loads, figuring it costs (actual cartage) an average of one-quarter cent to deliver to service stations from point of manufacture. It was reported late in the week that one major company was selling gasoline

Cracked Gasoline Production

Week ending March 14, 1931

(Barrels of 42 gallons)

District	Potential Total	Charging Reporting	Capacity Per Cent	Production Total	Daily Average
East Coast	246,900	222,900	90.3	536,000	76,600
Appalachian	45,900	43,400	94.6	127,000	18,200
Ind., Ill., Ky.	294,200	270,200	91.8	458,000	65,400
Okla., Kans., Mo.	219,900	195,900	89.1	372,000	53,100
Texas	395,500	379,400	95.9	668,000	95,400
Louisiana-Arkansas	109,400	107,900	98.6	256,000	36,600
Rocky Mountain	95,100	95,100	100.0	93,000	13,300
California	182,700	182,700	100.0	343,000	49,000
Total week Mar. 14	1,589,600	1,497,500	94.2	2,853,000	407,600
Total week Mar. 7	1,589,600	1,505,500	94.7	2,698,000	385,400
T'tl Mar. 15, '30		Not Available			

The Texas and Louisiana Gulf Coast Figures Shown Below are included in the totals of their respective districts.

Texas Gulf Coast	305,000	300,500	98.5	552,000	78,900
Louisiana Gulf Coast	77,000	77,000	100.0	198,000	28,300

Imports of Petroleum

(Barrels of 42 gallons)

	Week Ended March 14		Week Ended March 7
AT ATLANTIC COAST PORTS—			
Baltimore	239,000	"A"	322,000
Boston	66,000		184,000
New York	982,000		798,000
Philadelphia	225,000		135,000
Others	57,000		.....
Total	1,579,000		1,439,000
Daily Average	225,571		205,572
AT GULF COAST PORTS—			
Galveston District	.....		63,000
New Orleans & Baton Rouge	.....		102,000
Port Arthur & Sabine District	.....		.....
Tampa	15,000		.....
Total	15,000		165,000
Daily Average	2,143		23,571
AT ALL UNITED STATES PORTS—			
Total	1,594,000		1,604,000
Daily Average	227,714		229,143
Daily Average Four Weeks Ended	238,643		233,393
Distribution of Total Imports Is As Follows:			
Crude	897,000		885,000
Gasoline	319,000	"A"	371,000
Gas Oil	55,000		49,000
Fuel Oil	323,000		299,000
Total	1,594,000		1,604,000

"A"—Revised.

California Oil Receipts

(Barrels of 42 gallons)

	Week Ended March 14	Week Ended March 7
ATLANTIC COAST PORTS—		
Baltimore	156,000	.....
Boston	50,000	.....
New York	72,000	195,000
Philadelphia	110,000	57,000
Others	.....	138,000
Total	388,000	390,000
Daily Average	55,428	55,714
AT GULF COAST PORTS—		
Total	120,000	77,000
Daily Average	17,143	11,000
AT ATLANTIC AND GULF COAST PORTS—		
Total	508,000	467,000
Daily Average	72,571	66,714
Daily Average Four Weeks Ended	57,750	48,357
Distribution of Total California Oil Receipts is as Follows:		
Gasoline	388,000	390,000
Gas Oil	120,000	77,000
Total	508,000	467,000

MARKET SECTION

United States Daily Average Production

1930	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
March	622,650	115,500	644,400	206,000	41,600	58,600	132,700	73,600	649,000	2,544,050	78,865,400
April	657,050	122,200	640,950	206,800	42,100	57,800	138,700	75,950	625,700	2,576,250	77,018,100
May	663,300	131,000	662,350	203,900	39,900	53,800	137,150	82,500	623,700	2,597,700	80,529,600
June	665,550	133,600	668,300	210,500	40,300	56,900	135,750	84,600	598,000	2,593,500	77,806,900
July	594,750	121,600	652,350	209,400	40,550	55,400	137,200	98,350	610,450	2,520,050	78,121,200
August	558,850	115,650	646,400	206,600	41,500	55,100	128,550	106,000	611,250	2,470,900	76,597,600
September	558,900	116,550	606,550	200,750	40,150	53,550	121,400	110,650	604,900	2,413,400	72,402,205
October	542,100	114,850	609,500	194,850	41,500	52,800	121,750	104,000	590,800	2,372,150	73,536,350
November	491,550	111,400	579,350	190,100	44,050	52,000	116,400	101,950	601,200	2,288,000	68,639,150
December	459,300	105,550	533,400	189,300	43,000	51,100	112,200	100,500	587,450	2,181,800	67,636,500
1931											
January	452,000	106,350	511,050	188,850	41,100	50,700	110,300	96,700	535,700	2,092,750	64,874,450
February	473,750	114,450	523,700	185,600	43,950	49,950	109,800	100,100	527,300	2,600,600	59,600,450
March 7	501,650	112,450	546,250	180,600	41,250	47,950	109,000	94,050	523,500	2,156,700	14,096,900
March 14	509,800	111,400	573,700	178,450	40,500	48,400	106,150	94,250	527,900	2,190,550	15,333,850
March 21	572,100	109,800	585,500	174,250	39,950	47,300	109,550	97,700	531,900	2,268,050	15,876,350
Increase	62,300	.....	11,800	.....	.....	.....	3,400	3,450	4,000	77,500	542,500
Decrease	.....	1,600	.....	4,200	550	1,100	.....	.....	.....	.....	.....

Last Week's Daily Average Production by Districts

TEXAS	March 21	March 14
Panhandle District	53,700	52,350
North Texas	58,300	59,450
West Central Texas	25,300	25,300
East Central Texas	138,900	129,650
West Texas	234,650	231,350
Southwest Texas	74,650	75,600
Texas Gulf Coast	147,500	152,350
Total Texas	733,000	726,050
OKLAHOMA	572,100	509,800
CALIFORNIA	531,900	527,900
KANSAS	109,800	111,400
North Louisiana	39,950	40,500
Louisiana Gulf Coast	26,750	26,100
Total Louisiana	66,700	66,600
ARKANSAS	47,300	48,400
MOUNTAIN STATES		
Wyoming	43,950	41,800
Montana	8,650	8,400
Colorado	4,250	4,150
New Mexico	40,850	39,900
Total Mountain States	97,700	94,250
EASTERN STATES	109,550	106,150
Total United States	2,268,050	2,190,550

Summarized Review of Field Results

State—	Completions This week	Completions Last week	Oil Wells This week	Oil Wells Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	..	1	..	1	..	..	..	..	...	300
California	5	10	5	8	..	..	..	2	2,310	6,440
Illinois	..	1	..	..	..	..	..	1	...	...
Indiana	9	2	4	..	2	1	3	1	58	...
Kansas	7	13	2	5	1	3	4	5	440	1,850
Kentucky	1	16	..	8	..	5	1	3	...	590
Louisiana	9	9	3	3	1	..	5	6	960	577
Michigan	2	..	1	..	1	..	..	..	130	...
Mississippi	2	1	..	..	1	..	1	1	...	...
New York	3	..	2	..	..	..	1	..	8	...
Ohio	18	26	4	7	10	11	4	8	67	119
Oklahoma	30	22	11	11	4	3	15	8	15,003	16,500
Pennsylvania	22	4	14	2	5	1	3	1	56	11
Texas	103	59	56	27	3	4	44	28	139,612	104,520
West Virginia	11	13	3	3	7	10	1	..	11	22
Total	222	177	105	75	35	38	82	64	158,655	131,029
Increase this week	45	..	30	..	..	..	18	..	27,626	...
Decrease this week	..	..	..	..	3	..	..	..	...	...

Comparison of Permits Granted for New Wells

State—	Week Ending March 21	Previous week	This week 1930	Total this Month	This month 1930	Total this year	Total this date last year	1930 year total
Arkansas	..	4	2	4	7	16	27	108
California	10	12	5	22	52	89	173	922
Louisiana	7	13	30	20	146	89	244	948
Kansas	3	8	18	11	76	123	209	944
Oklahoma	18	28	63	46	233	269	612	2,830
Texas	91	101	160	192	655	1,038	1,746	7,052
Total	129	166	278	295	1,169	1,624	3,111	12,804

MARKET SECTION

to large consumers at 6½ cents, tax paid, f.o.b. the refinery. This nets the company 3½ cents. Natural gasoline is weak, and selling from four to five cents, no quotation standing longer than to cover one sale. Every sale calls for dickering. And there is plenty of natural gasoline for sale.

Lower crude prices have weakened the fuel oil market, but not in keeping with the total cuts, since lower gravity crudes were not cut very much. Fuel oil is available at 45 to 50 cents, against former quotations some two or three weeks ago of 60 cents.

The Playa del Rey crude, due to a small sulphur content, is not very desirable, and as a result, some of the product is selling at around 20 cents net to the producer. In some instances, 50 cents is being paid, but a carrying or transportation charge of 13 cents a barrel reduces the net received by the producer.

At the end of the week, many felt that further price reductions are not to be expected, and many of the larger service station owners are filling their storage with what they now believe to be the low price of the season.

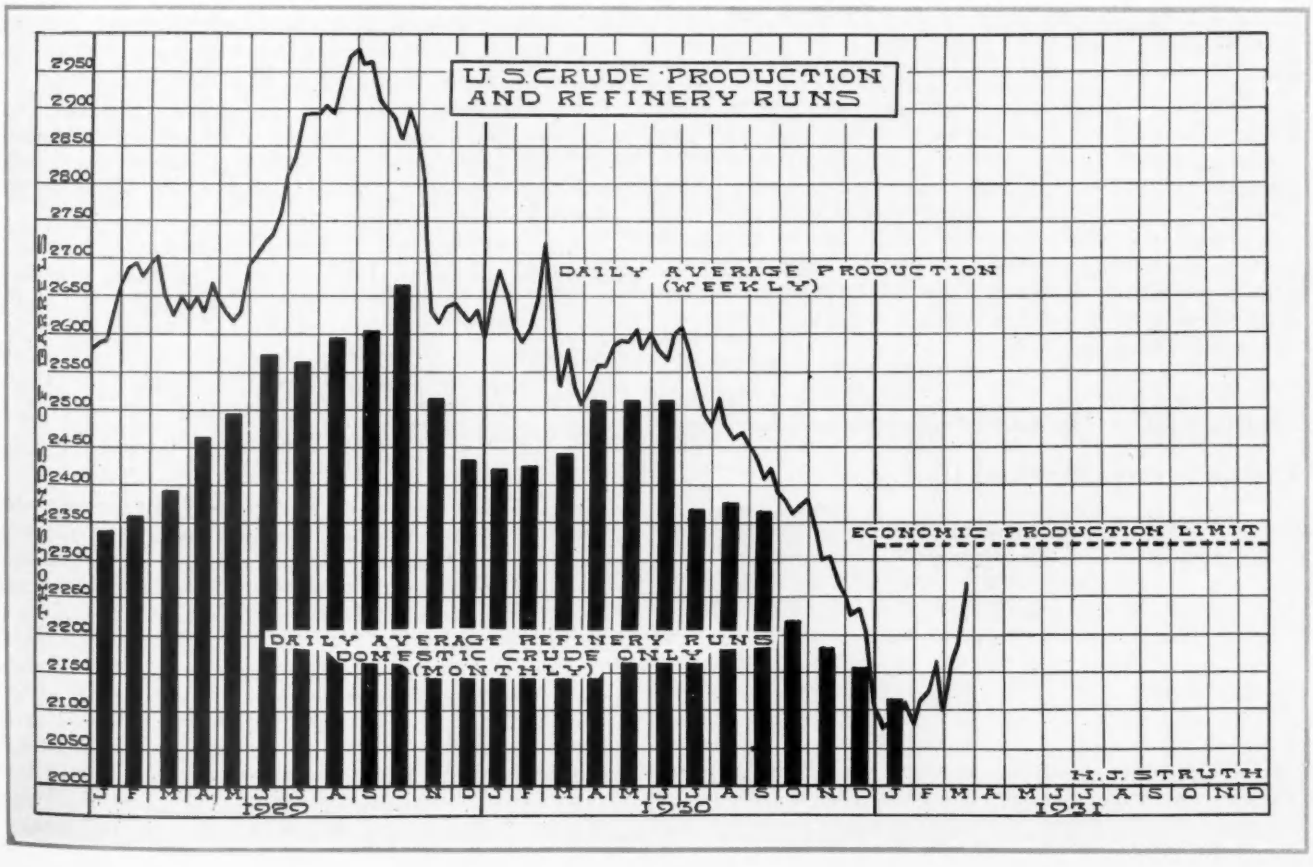
It is thought that the differential, partly the cause of the price war, will be pegged at three cents, against a former differential of four to five cents. Standard Oil Company in making its first two reductions in gasoline prices, fixed two cents as the differential, but since the other major companies had many contracts calling for four to five cents, later reductions fixed three cents as the final figure—the profit to the retailer. Many dealers with wide margins had been giving away a part of their profits, thus causing a cut price situation. Not many will give away any part of the two or three cents.

Magnolia Expected to Apply Gravity Scale in East Texas

Tyler, Texas.—Payment of Mid-Continent gravity scale prices for crude in Rusk and Gregg Counties is known to be under consideration by officials of Magnolia Petroleum Company to be effective when operation of its 10-inch trunk line from the district gets under way March 27. Official announcement as to the price to be paid by the company will not be made until oil begins moving through the line, but the Mid-Continent schedule is contemplated in order that no discrimination be shown against East Texas fields, which have heretofore been penalized by all shippers in paying producers and royalty interests even though the oil is on a par with that produced in such fields as Oklahoma City and Ranger.

Welding work on Magnolia Pipe Line Company's East Texas carrier which extends about 62 miles to the southeast from the Norris station and tank farm, Gregg County, to Center station, near the Texas-Louisiana border. Most of the line was tested with water as construction work progressed. It will have a capacity ranging from 25,000 to 28,000 barrels daily to the Gulf Coast, but may be increased to 40,000 barrels daily by the installation of additional pump station units and pipe line loops from Center to the south.

Magnolia Petroleum Company has four completed wells in the two counties rated at more than double the capacity of its line, and has contracted to perform common carrier hauls for independent companies in the district, so will not be in the market for outside oil for the time being. Royalty owners



MARKET SECTION

under its leases will be the only direct beneficiaries should Mid-Continent price be posted.

Construction of trunk lines from the East Texas flush fields to tap distant refining and market centers is being hurried along by the builders, except Humble Pipe Line Company. The latter has elected to hold off on winding up construction work on its eight-inch extension line from the Van-Louisiana unit, but has made aerial survey for the construction of a second line that will extend from the Kilgore field to the Boggy Creek field, where a connection will be made with an almost idle eight-inch trung line system.

Gulf Pipe Line Company and Texas Pipe Line Company are proceeding with work on their trunk line connections into the district, while contracts have been awarded for the construction of eight-inch carriers to Shreveport district by Arkansas-Louisiana Pipe Line Company and Atlas Pipe Line Company. The eighth and largest of the trunk line outlets for the district is proposed by Gulf Coast Pipe Line Company from the district to the Beaumont treminals of Yount-Lee Oil Company, using 12-inch pipe.

Withdrawal of Healdton Oil Totals 12,000 Barrels Daily

Oklahoma City.—Withdrawal of Healdton heavy grade crudes held by Carter Oil Company at its Wilson tank farm in Southern Oklahoma at rate of about 12,000 barrels daily is being made for consignment to the Baton Rouge, Louisiana, refinery of Standard Oil Company of Louisiana. This oil is moving south via DeQueen, Arkansas, through Oklahoma Pipe Line Company's system, and similar withdrawals are to be started shortly from the above concern's crude stocks at Sessions tank farm, near Ringling. Pumps will be shut down at the Wilson farm when connections are made at Sessions.

Shipments of crude from Oklahoma and Kansas fields through Oklahoma Pipe Line Company's system to Baton Rouge are being tapered off in proportion to the production increases sustained by the Van field, East Texas, as arrangements have been made for an exchange between Pure Oil Company and subsidiaries of Standard Oil Company of New Jersey. The latter receives Van crude from Pure Oil Company, then Oklahoma-Kansas crudes are allotted to Pure Oil Company's refineries in the Middle West and East through Ajax Pipe Line Company's network.

Demand for Howard-Glasscock Crude Shows Marked Increase

San Angelo, Texas.—Increased demand for Howard-Glasscock County crude with major companies and local refineries has followed in the wake of the posting of a 35-cent price for all grades of oil, which ranges from 27 to 34 gravity. Effective March 17 the district was alloted an increase of 6148 barrels in allowable production, making the new quota 27,073 barrels through the remainder of the month. Cosden Oil Company increased its nominations from 6000 to 9000 barrels daily as rseult of additional crude being needed to cover on gasoline business booked by its Big Spring plants, while Shell Petroleum Corporation boosted its purchases from 4000 to 6000 barrels daily, and Coltex Refining Company added an extra 1000 barrels to its quota. Minor increases were accepted by other purchasers.

The 531 producing wells in the district have a combined potential output of 77,965 barrels daily on the pump, according to figures released by Umpire E. E. Andrews.

Extension of the Llano-Scarborough field more than one mile to the south has been accomplished by Magnolia Petroleum Company's J. B. Walton 1, located near the center of 640-acre lease, comprising all of Section 16, Block 77, Public School Land Survey. This well exhausted an 8,000,000-cubic-foot flow of dry gas at 3116-19 feet, and flowed 50 barrels oil and 2,000,000 cubic feet gas on 24-hour test from brown sand at 3145-55 feet. The oil tests 31.7 gravity, and is of much lower grade than that found in the field proper. The company has its own pipe line system in the area.

Sparton Refining Company Buys Shreveport-El Dorado

Shreveport.—Stockholders of Shreveport-El Dorado Pipe Line Company, Inc., March 17, formally approved the action of the directors in contracting with Spartan Refining Company, Inc., for sale of all the company's properties including a refinery located here of 10,000 barrels daily capacity, 125 miles of eight and six-inch pipe line from Shreveport to Smackover and El Dorado, Arkansas by way of Homer, Louisiana, to Sparton Refining Company, Inc. Assets of the sold company are said to be approximately $6,000,000.

Stockholders in the sold company will get approximately 150,000 shares of stock in Sparton Refining Company, Inc, and Atlas Pipe Line Company, Inc., which have identical officers and directors. Atlas Pipe Line Company, Inc., will build an eight-inch line from the Rusk County, Texas, oil field to Shreveport at a cost of approximately $700,000.

The pipe lines included in the merger, extending from Shreveport to Arkansas, consist of 81 miles of eight-inch line, and approximately 44 miles of six-inch line besides gathering systems in south Arkansas fields. There are five pumping stations on the line.

Officers of Sparton Refining Company, Inc., and Atlas Pipe Line Company, Inc., are: E. R. Ratcliff, president; Samuel D. Hunter, vice-president and chairman of the board; B. H. Gray, vice-president and treasurer, J. F. Atkins, secretary. Other directors besides the president and vice-president are: J. K. Wadley, R. T. Moore, J. W. Olvey, J. B. Beaird, C. D. Keen, Guy Oakes, W. C. Woolf, J. S. Reily and William L. Chisman.

Tyler, Texas.—Soliciting of natural gas contracts from owners of producing leases in the Kilgore field has been started by Magnolia Petroleum Company, which proposes to erect a compression natural gasoline plant on its Della Crim 50-acre lease, R. E. Winn Survey. The company is offering 25 per cent royalty for gas. Field tests made on Magnolia Petroleum Company's three big producers on the Crim property reveal an average gas production of two million cubic feet daily from each, with a net recovery of about 2½ gallons per 1000 cubic feet. The gross yield of gasoline is about double the above figure, but high temperatures and a high percentage of "wild" portions, including propane and butane materially reduce the net recovery.

MARKET SECTION

California Oil Marketing Association Being Formed

Los Angeles.—At a preliminary meeting of prominent independent oil operators of California held in Los Angeles, March 20, called by Ralph B. Lloyd, large royalty owner of Ventura County, and oil operator, it was decided to proceed in the organization of a co-operative crude oil marketing association patterned to some extent on the lines of California Fruit Growers Exchange. Judge William Hazlett is acting in a legal advisory capacity. Independent producers of the state produce in excess of 40 per cent of the total production. The machinery for the permanent organization is now being worked out and further meetings are to be held from day to day until tentative plans are realized.

Wichita Falls, Texas.—King Royalty Company, Wichita Falls, has acquired controlling interest in Phillips Petroleum Company's J. F. Larimore 160-acre lease, New Castle field, Young County, with 15 wells rated at a combined daily potential of 2500 barrels from the 700-foot sand, for $125,000 cash and other considerations. This property is the largest single producing lease in the district, and was inherited by Phillips Petroleum Company through the absorption of Independent Oil & Gas Company. King Royalty Company is to carry Phillips Petroleum Company for a one-third over-riding royalty to be effective after the original cash payment has been regained through crude production, and development work has been started on four locations. The lease consists of the south half of Section 2246, T.E.&L. Survey.

Oil Stocks in California Reduced During February

Los Angeles.—California stocks of petroleum were reduced 1,094,474 barrels during February to a total of 178,939,838 barrels, which compares with 189,698,723 barrels end of February, 1930. Stocks of heavy crude, including all grades of fuel, were reduced 1,218,170 barrels during February, while refinable crude stocks increased 181,808 barrels. Gasoline stocks were off 6900 barrels. At end of last month, 294 wells were actively drilling in the state, of which 152 were wildcats. Twenty-five drilling wells were abandoned. Daily average production of crude in February was 533,248 barrels against 531,798 barrels in January. Practically all of this increase was at Long Beach.

Oklahoma City, Memphis or Tulsa Gets A. A. P. G. Next

San Antonio, Texas.—Selection of the meeting place for the next annual convention of the American Association of Petroleum Geologists has been postponed until a later meeting by the executive committee of the organization, no decision having been made before conclusion of the sixteenth annual meeting of the association here Saturday, March 21.

While there were various cities bidding for the convention a year hence, including New York, Chicago and Detroit, it was reported here that Tulsa, Oklahoma City and Memphis stood out as probably the strongest contenders.

Crude Oil Price Quotations

(Revised to March 24, 1931)

▼ ▼ ▼

EASTERN STATES

(Posted by Joseph Seep Purchasing Agency)

Bradford—Alleghany district (posted by Tide Water Pipe Co., Ltd.) (Effective Nov. 13, 1930) $2.15

Penna. Grade Oil in National Transit Lines (Other Pennsylvania) (Effective, Nov. 13, 1930) 1.85

Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania) (Effective Nov. 13, 1930) 1.80

Penna. Grade Oil in Eureka Pipe Lines (West Virginia) (Effective Nov. 13, 1930) 1.70

Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.) (Effective Nov. 13, 1930) 1.45

Corning Grade in Buckeye Pipe Lines (Ohio) (Effective Dec. 31, 1930)..... 1.15

Somerset Oil in Eureka Pipe Lines (Effective March 6, 1931)..... .75

Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 9, 1929)... 0.60

*Oil run prior to July 1, 1929 is $2.10 per bbl.

(Posted by Stoll Oil Refining Company)

Oil City, Ky., oil in Stoll lines (Effective March 7, 1931) ..... .70

MICHIGAN

(Posted by Dixie Oil Company)

Traverse and Dundee (Muskegon), effective April 16, 1930, same gravity and price schedule as Prairie posts in Oklahoma and Kansas, on gravity basis prior to reduction on Oct. 27, 1930.

(Posted by Pure Oil Company)

Midland, Midland County, Oct. 27, 1930..$1.10

CENTRAL STATES FIELDS

(Posted by Ohio Oil Company)

(Effective March 5, 1931)

Wooster	$ .99	Princeton	.80
Lima	.90	Illinois	.80
Waterloo	1.20	W. Kentucky	.75
Indiana	.50		

CANADIAN CRUDE

(Posted by Imperial Oil Refineries, Ltd.)

(Effective October 28, 1930)

Petrolia $1.50

Oil Springs 1.57

CRUDE PRODUCTION TAXES

Oklahoma—Three per cent of gross value, less royalty interest.

Texas—Two per cent of gross value.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 per cent of gross market value.

Montana—Two per cent of gross value at well.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Stanolind Crude Oil Purchasing Company and Prairie Oil & Gas Company, Effective Nov. 1, 1930. Carter Oil Company Same Schedule Effective March 5, 1931

Below 29	$ .43	35-35.9	.57
29-29.9	.45	36-36.9	.59
30-30.9	.47	37-37.9	.61
31-31.9	.49	38-38.9	.63
32-32.9	.51	39-39.9	.65
33-33.9	.53	40 and above	.67
34-34.9	.55		

Magnolia Petroleum Company Effective March 5, 1931

Below 26	.40	27-27.9	.42
26-26.9	.41	28-28.9	.43

From here to 40 and above gravity same schedule as above.

NORTH TEXAS

North Texas Crude in Wichita, Wilbarger, Archer, Northern Young, Van Zandt.

All Purchasers

(Effective March 10, 1931)

For Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Currie, Moran, and Nocona crudes:

Below 29	$ .43	35-35.9	$ .57
29-29.9	.45	36-36.9	.59
30-30.9	.47	37-37.9	.61
31-31.9	.49	38-38.9	.63
32-32.9	.51	39-39.9	.65
33-33.9	.53	40 and above	.67
34-34.9	.55		

(Continued on following page)

MARKET SECTION

▼ ▼ CRUDE OIL PRICE QUOTATIONS ▼ ▼

(Continued from page 57)

PANHANDLE
All Purchasers
(Effective March 10, 1931)
Gray County Crude

Below 35	$ .43	38-38.9	.51
35-35.9	.45	39-39.9	.53
36-36.9	.47	40 and above	.55
37-37.9	.49		

All Purchasers
Effective March 10, 1931
Carson and Hutchinson County Crude

Below 35	$ .38	38-38.9	.46
35-35.9	.40	39-39.9	.48
36-36.9	.42	40 and above	.50
37-37.9	.44		

WEST TEXAS AND NEW MEXICO
All Purchasers
(Effective March 10, 1931)

Winkler County	$ .40
Pecos County	.40
Lea County	.40
Crane, Upton, Howard, Ector, Ward Loving, Crockett, Mitchell, Glasscock Co.'s	.35

SOUTHWEST TEXAS
All Purchasers
(Effective March 10, 1931)

Refugio Heavy crude, below 25 gravity	.69		
Refugio Light crude:			
27-27.9	.75	33-33.9	.87
28-28.9	.77	34-34.9	.89
25-25.9	$ .71	35-35.9	.91
26-26.9	.73	36-36.9	.93
29-29.9	.79	37-37.9	.95
30-30.9	.81	38-38.9	.97
31-31.9	.83	39-39.9	.99
32-32.9	.85	40 and above	1.01
Mirando	$ .69		
Salt Flat	.60		
Darst Creek	.60		
Pettus	.95		
Luling	.45		
Corsicana, heavy	.45		

GULF COAST
(Posted by Humble Oil & Refining Company, The Texas Company, Gulf Pipe Line Company and Sun Oil Company)

Gulf Coast Crude will be classified as follows in fields designated below:

Goose Creek, Hull, Boling, Liberty, Orange, Pierce Junction, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugar Land, West Columbia and Humble crudes:

"A" GRADE—All crudes conforming to the following tests:

Viscosity—Not less than 100 seconds at 100° F. Saybolt.

Sulphur—Not over .4%.

Beaume Gravity—Not over 25 at 60° F.

Cold test of distillates having a viscosity of 1000 seconds at 100° F. shall not be over 5° F.

"B" GRADE—All Coastal crude which does not meet the test for "A" grade.

(Effective Jan. 14, 1931)

High Island	$ .75		
Grade "A"	.80		
Grade "B"			
Below 25	$ .69	33-33.9	.87
25-25.9	.71	34-34.9	.89
26-26.9	.73	35-35.9	.91
27-27.9	.75	36-36.9	.93
28-28.9	.77	37-37.9	.95
29-29.9	.79	38-38.9	.97
30-30.9	.81	39-39.9	.99
31-31.9	.83	40 and above	1.01
32-32.9	.85		
Jennings, La.	.80		
Markham (The Texas Company)	.50		

LOUISIANA-ARKANSAS
All Purchasers Except Magnolia Petroleum Co.,
(Effective March 10, 1931)
Pine Island, Haynesville, Bull Bayou. El Dorado, Rainbow, Cotton Valley, Zwolle.

Below 29	$ .43	35-35.9	.57
29-29.9	.45	36-36.9	.59
30-30.9	.47	37-37.9	.61
31-31.9	.49	38-38.9	.63
32-32.9	.51	39-39.9	.65
33-33.9	.53	40 and above	.67
34-34.9	.55		
Urania	.75		
Bellevue	$1.00		

Magnolia Petroleum Company, Effective March 10, 1931

Below 26	$ .40	27-27.9	.42
26-26.9	.41	28-28.9	.43

From here prices same as schedule above.

STEPHENS

Below 29	$ .54	31 to 31.9	.66
29 to 29.9	.58	32 and above	.70
30 to 30.9	.62		
Smackover	.45		
El Dorado, East Field	.70		
Bellevue	.45		

ROCKY MOUNTAIN FIELDS
(Salt Creek prices effective March 5, 1931)

‡Salt Creek		Elk Basin (Effective Oct. 28, 1931)	
29-29.9	.45	Grass Creek light	.90
30-30.9	.47	Big Muddy	.65
31-31.9	.49	Lance Creek	.98
32-32.9	.51	Rock Creek	.66
33-33.9	.53	Mule Creek	1.20
34-34.9	.55	Rex Lake	1.10
35-35.9	.57	‡Osage	.50
36-36.9	.59	‡Cat Creek	1.25
37 and above	.61	Pondera	1.45
		Sunburst, Mont.	1.55
		‡Hogback, N. M.	1.40

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

California

Effective March 19, 1931
Posted by Standard Oil Company of California

Gravity	Signal Hill	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills*
14-14.9	$ .65	$ .65	$ .65	$ .65	$ .65		$ .65			$ .65	$ .65	$ .65	$ .65	$ .65	.	$ .55	$ .55	$ .55	$ .55	$ .55	
15-15.9	.65	.65	.65	.65	.65		.65			.65	.65	.65	.65	.65		.55	.55	.55	.55	.55	
16-16.9	.65	.65	.65	.65	.65		.65			.65	.65	.65	.65	.65		.55	.55	.55	.55	.55	
17-17.9	.65	.65	.65	.65	.65		.65			.65	.65	.65	.65	.65		.55	.55	.55	.55	.55	
18-18.9	.65	.65	.65	.65	.65		.65			.65	.65	.65	.65	.65		.55	.55	.55	.55	.55	
19-19.9	.65	.65	.65	.65	.65		.65			.65	.65	.65	.65	.65		.55	.55	.55	.55	.55	
20-20.9	.66	.66	.66	.66	.66	.56	.66			.66	.66	.66	.66	.66			.56	.55	.55	.55	
21-21.9	.66	.66	.66	.66	.66	.56	.66			.66	.66	.66	.66	.66	.66		.56	.56	.56	.56	
22-22.9	.66	.66	.66	.66	.66	.56	.66			.66	.66	.66	.66	.66	.66		.56	.56	.56	.56	
23-23.9	.66	.66	.66	.66	.66	.56	.66			.66	.66		.66	.66	.66		.56	.56	.56	.56	
24-24.9	.66	.66	.66	.66	.66	.56	.66	.66		.66	.66		.66	.66	.66		.66	.56	.56	.56	
25-25.9	.67	.67	.67	.67	.67	.57	.67	.67		.67	.67		.67	.67	.67		.57	.57	.57	.57	
26-26.9	.67	.67	.67	.67	.67		.67	.67		.67	.67		.67	.67	.67		.57	.57	.57	.57	
27-27.9	.67	.67	.67	.67	.67		.67	.67		.67	.67		.67	.67	.67		.57	.57	.57	.57	
28-28.9	.67			.67	.67		.67	.67		.67	.67		.67	.67	.67		.57	.57	.57		
29-29.9	.67			.67			.67	.67			.67		.67	.67	.67		.57	.57	.57		
30-30.9	.68			.68			.68	.68			.68		.68	.68	.68		.58	.58	.58		.58
31-31.9	.68			.68			.68	.68							.68		.58	.58	.58		.58
32-32.9	.68			.68				.68							.68		.58	.58	.58		.58
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35-35.9								.69	.88						.69						.59
36-36.9								.69	.94						.69						.59
37-37.9								.69	.97						.69						.59
38-38.9								.69	.91						.69						.59
39-39.9	•							.69	.100						.69						.59
40-40.9			•					.70	1.03												.60
41-41.9									1.07												
42-42.9									1.10												

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*Posted by Union Oil Company.

▼ "MARKET SITUATION IN CALIFORNIA" ▼

Above prices included three cents state tax

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Now cross your fingers and note the pressure between them. When you uncross your fingers they fly apart—just as the strands do when you cut ordinary wire rope.

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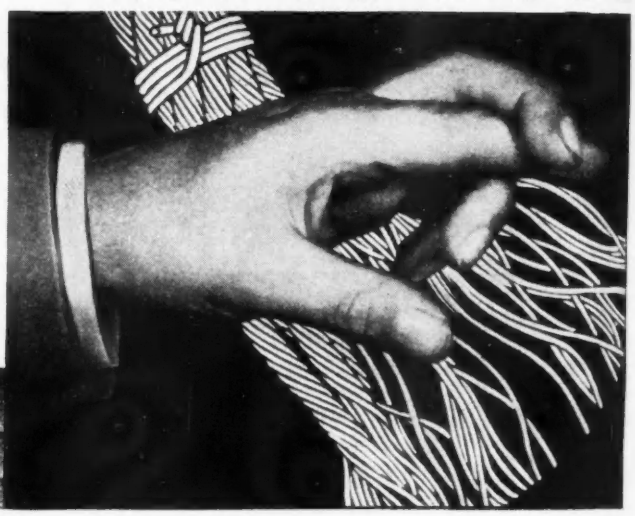

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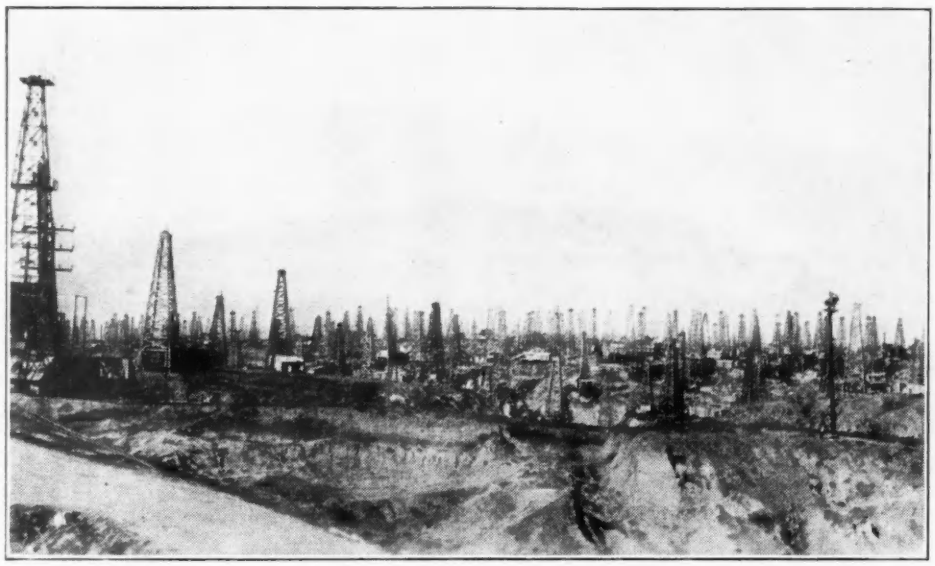
WORLD PETROLEUM IN REVIEW



Rhodesia Regulates Petroleum Imports

Livingstone, Northern Rhodesia. —Enactment of an ordinance by the Governor that has been approved by the legislative council will regulate importation and storage of petroleum and its products. This measure was recently passed with the principal provisions that the governor is empowered to prohibit imports and exports of petroleum except at prescribed places and under prescribed conditions. He may also regulate its transportation by any means, the quantity which may be stored, the mode of storage, as well as the licensing of places for the purpose.

Exploration Methods Recommended to Government

Sydney, Australia. —Successful use of geophysical and seismographic methods of determining the possible location of oil-bearing sands in the various oil fields of the United States has led the Australian government to be officially advised that exploration work in this country will be organized along the same lines. Drilling operations in the two active fields, Queensland and Victoria, are being continued without any unusual amount of activity. A few of the wells are bailing small quantities of oil.

Canadian Company Builds Oil Line

Calgary, Canada. — Conclusion of arrangements to supply the Canadian Pacific railway with crude oil has called for the building of a 14-mile pipe line to the station at McLaughlin. The line will be completed around the first of May if weather conditions do not interfere. The oil will be handled from the station at McLaughlin by tank cars. Materials for increasing the operations in the field are being moved in and it is expected that the four wells now producing will be materially aided in producing the amount of oil necessary to fill the contract. It is thought that a small topping plant will be built later in the year at McLaughlin.

THE PICTURE—Yenang Yaung field in Upper Burma.

Mexican Production Follows Decline

Mexico, City, Mexico.—Mexican production decline begun in August as a result of competition from imported crude petroleum has continued to show decreases according to reports of November production. Estimates for production in Panuco and Tuxpam districts for November show an aggregate of 2,223,446 barrels, compared with 2,467,578 barrels for October, a decrease of 244,132 barrels. Daily average production of November was 74,115 barrels.

Pan American Petroleum & Transport Company continued the largest producer with 19,921 barrels daily, compared with 21,790 barrels for October. Royal Dutch Shell (including Mexican Eagle) was second with 10,237 barrels daily, against 10,294 barrels for October.

Mexican Eagle Reduces Operations

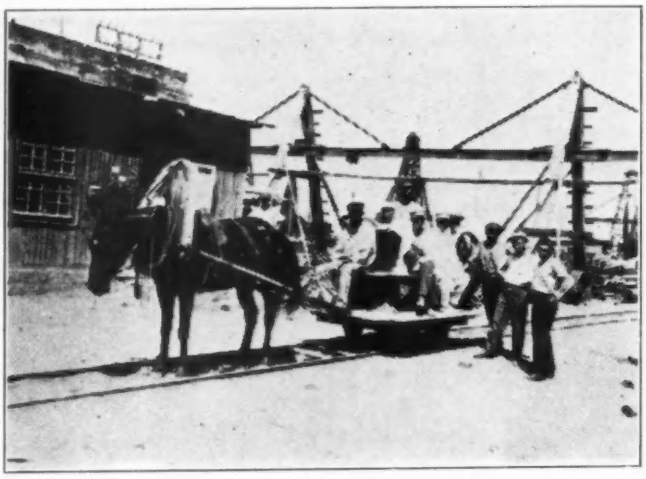
Mexico City. — Reports from Mexican Eagle Oil Company, subsidiary of Royal Dutch-Shell, state that operations of that company will be greatly reduced in the near future. The curtailment of operations will require labor adjustments by which the company offers to compensate each dismissed worker with one month's salary for each year of service, in addition to the three month's dismissal indemnification which the law provides. The general depression in the oil industry all over the world has been the reason given by the company for its curtailment of operations.

Ministry Confirms Concession

Mexico City.—An administrative ruling by the Ministry of Industry, Commerce and Labor covering the confirmatory concession of a 100,000-acre tract in the Chapacao district of northern Vera Cruz, has been made in favor of the applicant for the concession, Mexican Petroleum Company, an interest of Standard Oil Company (Indiana). Possible court action by parties likely to be affected by the decision will delay final confirmation of

the concession. The company plans to begin operations on the tract as soon as the concession is confirmed.

This application has been pending since June, 1928, and involves one of the largest areas named in confirmatory concessions applications. A large amount of oil has been produced from over 200 wells that have been drilled along the southern edge of the tract. The oil is heavy and is especially adapted for fuel and asphalt.



Transportation in the Artium oil field on the Island of Sviatoy, in the Caspian Sea, near Baku, Russia

Canadian Production Continues High

Ontario, Canada. — The new high mark established in production of crude oil in Alberta during September, 1930, has been passed by the estimates for October and November. Reports of operators show that production for October was 159,860 barrels while November production totaled 150,352 barrels. Figures for October, 1929, show a total of 103,535 barrels while the November figures of the same year were estimated at 104,140 barrels.

Roumanian Crude Output Increased

Bucharest, Roumania. — Crude estimates for December amounted to 4,095,000 barrels against 2,677,500 barrels for November. Production for the same month of 1929 totaled 2,898,000 barrels. The figure for December shows clearly the complete breakdown of the proration agreement instituted in July, 1930. Astra Romana was the leading producing company with an output of 611,401 barrels while Steaua Romana was the second largest producer with a total output of 535,090 barrels.

Cordillera Region Reports Discovery

Buenos Aires, Argentina. — A petroleum rich in paraffin is reported to have been discovered in the Cordillera region of this country and a commission has been appointed to report as the best means of protecting this deposit and to devise the requisite legislation. It is stated that the government has authorized exploitation of deposits in the region of Tranquitas, Province of Salta, on behalf of the State.

Crude Production For November

Cairo, Egypt.—Crude production for November showed a slight decline with a total production of 170,646 barrels compared with 176,379 barrels for October. Total output of all fields for the first 11 months of 1930 has been estimated at 1,803,661 barrels.

Government Signs Development Contract

Bogota, Colombia. — Congress will be asked to approve a contract recently signed between the Colombian government and the South American Gulf Oil Company which calls for the development of the Catatumbo field, involving the Barco concession.

The new petroleum bill which has just been signed by President Herrera is conceded to be more incentive for development of the oil fields of the country. The government was aided in the framing of the new measure by George Rublee, attorney of Washington, D. C. He will remain in this country while the government arranges concessions. The reassignment of the Barco concession, formerly held by two American companies—Gulf Oil Corporation and Caribbean Syndicate, Ltd.—but cancelled in 1926 on the grounds that the companies did not complete their contracts regarding development of the deposits, will be the principal problem confronting the government in the granting of these concessions.

The Barco concession comprises approximately 1,300,000 acres in North Santander or an area of about 2000 square miles of the Maracaibo Basin, west of the Venezuela border. The pipe line of the Indian National Corporation passes within 60 miles of the concession.

Norddeutsche Mineraloel Interests Bought

Berlin.—Reports of the purchase of a majority stock of the Norddeutsche Mineraloel, a German oil producing company, have been confirmed by the purchasers, a group of Americans acting through a British intermediary. The company, although a small one, will plan a program of expansion that will be financed by the purchasers.

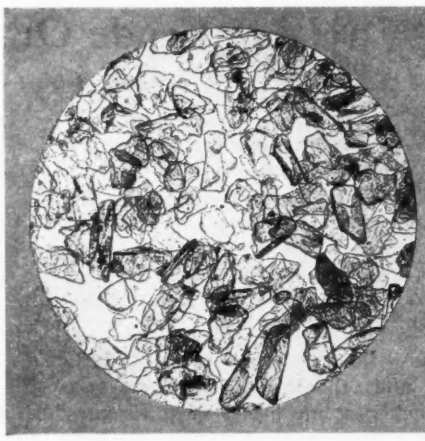
Crude Production Continues Low

Mexico City.—Mexican crude production continued low during December according to estimates of the department of petroleum, Ministry of Industry, Commerce and Labor. Output for the republic has been estimated at 2,921,919 barrels. Revised figures for November reveal a new total of 2,894,815 barrels. Crude production for the year, based on the estimated December production, shows a total of 39,529,901 barrels as compared with 44,687,500 barrels for 1929.

Annual Production Shows Increase

Calgary, Alberta.—The annual reports of the Canadian government, based on revised figures for the first 10 months of the year with the last two months estimated, show a gross gain of over 40 per cent for the province of Alberta over the estimates for 1929. The total of 1,404,700 barrels recovered during 1930 as against 999,152 barrels for 1929 has been due principally to the rapid development of the Turner Valley field. Each year since 1925 has shown a substantial increase in production for this province, the first production of any consequence being recovered in that year and estimated at 168,643 barrels.

Of this total produced during 1930, 1,286,000 barrels were naphtha, 104,000 barrels light crude and 14,700 barrels heavy crude oil. A large increase in output of wet gas was noticed in the Turner Valley field but drilling operations were generally restricted for the western part of Canada. During the year 37 new wells were completed in Turner Valley. The largest producer completed in the field yielded approximately 700 barrels of high grade naphtha daily.



THIS photo-micrograph shows how flakes of the internal reinforcement used by Barrett in enamels tend to interlock. They laminate with the waterproofing agent and give Barrett Specification Pipe Line Enamel unusual tensile strength and toughness.

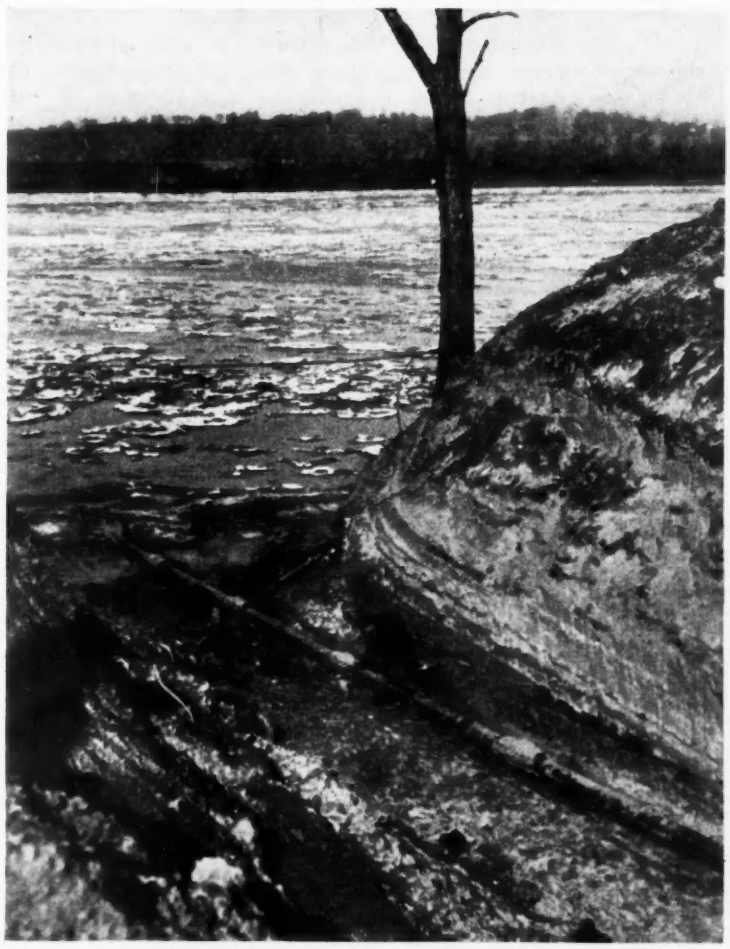
More bitumen in *Barrett Specification* PIPE LINE ENAMEL

EXPERTS agree that coal-tar pitch is the soundest waterproofing agent. In time, water will destroy most materials, but it has no effect on coal-tar pitch. The *more pitch* a pipe line enamel contains *per finished* ton, the greater is its value as a protective coating against corrosion.

Barrett Specification Pipe Line Enamel gives greatest protection per finished ton because the special, flake-type, mineral reinforcement used in it permits the use of more bitumen (pitch). The flaky, mineral particles of this reinforcement readily laminate and interlock, when combined with pitch, giving added strength and toughness. Furthermore, this Barrett reinforcement is non-absorbent, non-porous, chemically inert and highly dielectric.

There is a Barrett Specification Pipe Line Enamel to meet every pipe line requirement. Quantity surveys and complete information on Barrett products will be sent on request.

The *Barrett* Company



Missouri River Crossing. Note ice in water. Barrett Enamel withstands extreme cold or heat—and the most sudden changes of temperature.

Why Are Crude Oil Prices So Low?

(*Continued from page 26*)

That amount is 438,323,000 barrels under the average monthly inventories of 1930. Calculated at a cost of 25 cents a barrel, $109,580,750 would have been saved to the stockholders of oil companies during that year, were it not for the burdensome excess stocks. The advisability or necessity of reduced oil inventories is indicated by an average loss of around $100,000,000 a year, during the past four years due to the abnormally high stocks.

Others will probably show the relation between F.O.B. refinery prices of gasoline and other refined products and the prices of crude oil. Such gasoline prices at six important refining centers using Mid-Continent crude oil had decreased in March, 1931, by 44.0 per cent under those of August, 1929, while the price of 36 gravity Mid-Continent crude oil at the wells decreased by only 34.5 per cent, as of March 4, 1931. With little or no change in marketing and pipe line charges and refining and overhead costs, does it not appear that the 95 cent price of crude oil was high?

Even at the decreased prices of crude oil since March 4, it is doubtful if reasonable prices can be made by refiners, except those with highly efficient equipment and personnel and marketing outlets, unless gasoline production becomes more stabilized to demand during the remainder of this year and excess and distress stocks of that refined product eliminated.

But notwithstanding the excessive stocks of crude oil and the large potential and shut-in production, higher and more reasonable prices of crude oil should be obtained through the voluntary modification or elimination of the adverse factors which have brought about distress and excessive gasoline production and inventories, bootleg gasoline, low refinery prices and the investment of great sums of unproductive or frozen capital in the intensive drilling and development of new oil fields and in the construction of high cost and unnecessary marketing outlets.

Another psychological change appears necessary. Those who would rather produce large quantities of crude oil and a large gasoline gallonage, which must be sold at little or no profit or at a loss, should consider and adopt voluntarily the idea of a better adjustment of gasoline production to current demand. It should result in a living and reasonable profit to crude oil producers and refiners and the marketers of refined products.

Dated, New York, March 11, 1931.

[2] Editor's Note—In The Oil Weekly of August 1, 1930, page 53, H. J. Struth showed that crude equivalent of 60-day supply of gasoline, in addition to an actual stored gasoline supply of 30 days, would indicate that actual crude stocks are 46 per cent above normal requirements.

"IN answer to the question 'Why' outlined on page 23 of the March 6, 1931, issue of THE OIL WEEKLY, I would like to make the following reply:

"In order to fully comprehend the present condition of the oil industry it is necessary to look back a number of years. In 1918 total stocks in the United States of crude and refined products of petroleum amounted to slightly over 180,000,000 barrels, which represented less than half the total consumption of crude oil (domestic and export) for that year. Ever since 1918, with the exception of the years 1926 and 1930 when there were slight decreases in stocks, the industry has steadily increased the amount of crude oil and refined products in storage. Consumption likewise has shown a steady increase since 1918, but it has failed to increase at the same rate as stocks and the ratio between stocks and consumption has gradually been reduced so that today we find that the industry is faced with having 75 per cent of the year's requirements already held in storage. In other words while stocks of crude oil and refined products increased from 1918 to 1929 by over 267 per cent consumption increased during the same period by only 163 per cent. In 1918 the ratio of consumption to stocks was 2.2 to one and in 1929 the ratio between consumption and stocks was 1.6 to one, which shows pretty clearly what has been going on. In 1930 both stocks and consumption decreased slightly without changing the ratio appreciably. All this boils down to the fact that at the beginning of the year 1931 the stocks of crude oil and refined products were equal to nine months estimated consumption. Such an oversupply of any commodity can have but one effect and that is depressed prices.

"During the period covering the years 1918 to 1931 the price of crude oil has fluctuated considerably, but the trend of prices has been downward with the exception of 1926, when a temporary decline in production boosted prices for a short time. This steady lowering of prices could hardly be avoided with the ever increasing amount of crude oil and refined products going into storage.

"I think it is perfectly clear as to what is the cause of the present conditions, but when we try to determine the factors or who is to blame for the present conditions it is of course argumentative. We have an over-supply of oil at present and prices are too low for all to make a fair profit on their operations. The threat of foreign production has played its part in holding the price of crude oil in this country to a low figure. But so long as this country continues to be a net exporter of oil products this threat will not carry the same weight that it will when imports actually displace domestic production, if ever, in meeting domestic demand. The main issue before the industry has been to reduce stocks, and of course this can only be done by a reduction in the amount of oil brought to the surface of the ground. Proration in theory was all right, but when in operation it meets only half the issue it can not be considered a success nor can its maintenance be justified. Proration was put into effect in the larger oil producing states to curtail production of unwanted oil, that is oil which could not be taken to the refineries without increasing the amount already in storage. It was also intended that by prorating the production of oil in the domestic fields that some of the excess stocks could be liquidated and that a price level could be maintained which would give a fair profit to the producer.

"During 1930, 22,467,000 barrels of crude oil were taken from storage. This is a small fraction of our total consumption of nearly 900,000,000 barrels and can not be considered as any great accomplishment. As for prices it is well known that in the last year and a half there has been a reduction of approximately 50 per cent in all fields. While production of oil in this country was reduced in 1930 under the 1929 figure, but due to the falling off in consumption, nothing was gained from this.

"The cry of 'foreign oil' which is heard so much of late is, I feel, a hollow one. During 1930 62,129,000 barrels of crude oil were imported into this country and 16,927,000 barrels of gasoline were imported from foreign countries. In exchange this country exported to foreign countries 23,706,000 barrels of crude oil and 132,960,000 barrels of refined oils, 65,621,000 of which were gasoline. An analysis of the import figures will show that a great deal of the foreign crude is of low gravity and consumed mainly as fuel oil along the Atlantic seaboard;

it is cheap oil and it is doubtful if domestic oil could take the place of coal as a fuel, under normal conditions. The oil industry must realize that with the increasing use of internal combustion engines in foreign countries there is going to be a tremendous demand for crude oil such as we have witnessed in this country during the last decade. To hand this potential market over to foreign production by excluding foreign oil from this country by either a tariff or embargo would be folly. The tariff on wheat has not solved the farmer's troubles. It is my opinion that the oil industry is getting its eye off the ball when it continues to blame imports for its troubles.

"The fact that gasoline prices have not changed materially, during the last year and a half, in company with the lowering of crude oil prices can be only explained by the fact that the refineries and large retailers have not desired to pass on to the consumers the advantage of lower refining costs. Why they have not done this is most easily explained by their natural desire to make larger profits. This, of course, is not very fair to the public, and can not be called good business. The refiners whether owned by producing companies or not have been taking advantage of the crude oil producers as well as the gasoline consumers in their desire to protect themselves at both ends; having the cake and eating it too. The automobile has become such a necessary part of our lives that we can not give it up and as gasoline is so essential to its operations we can not do without it either; consequently no matter what the price and actual market conditions the public must pay what the large refiners and retailers determine.

"The oil industry is squarely up against the proposition of having more oil available than is in demand. The best way to solve the problem is to increase the demand, but this of course is not always possible to do at the right moment. When demand is low stocks must also be reduced and by failing to reduce its stocks the industry finds itself in its present condition. The leaders of the industry who really have its welfare at heart must take the lead in bringing about a cooperative spirit between the different branches of the industry. The producers, pipe line carriers, refiners and retailers; major and independent must come to the aid of each other. There can be no question that one barrel of oil at $1.20 is worth more under present conditions than two barrels of oil at $.60 a barrel. The oil industry has only to look at the sugar, coffee, cotton and rubber industries, to name only a few, to see what unorganized production in excess of demand can do. So long as the different factions in the industry continue to cut each others' throats there will be no real solution to the problem now confronting the industry. The base of all the evil can be found in the field where too many wells are drilled at more expense and with less profit to the producers than a smaller number would be if the lease owners could see the wisdom of pooling their interests; to say nothing of the increase in the ultimate recovery from the field. This lack of cooperative effort can be found right down the line in the industry through all of its branches from well to filling station, and the best way to cure any disease is to check it at its source.

Yours very truly,

PARKMAN SAYWARD,
United North and South Development Company.

San Antonio, Texas.

GEOLOGISTS, GEOPHYSICISTS, PALEANTOLOGISTS MEET

(*Continued from page 24Q*

panions by airplane to the John D. Rockefeller, Junior, Mountains, and of his long trek with several comrades and dog teams across bleak stretches of ice and snow in search of geological data, Mr. Gould illustrated the conditions under which he worked, and with that motion picture as a background, he gave further details of his findings for the benefit of the many geologists present.

"First of all," he asserted, "it is a vast land: a great continent, and a very high one. It is largely a great, high plateau. The average altitude is probably greater than 7000 feet, with peaks not far from the ice-coast rising to heights as great as 15,000 feet. This great height is a prime reason for the extremely cold temperatures found."

DR. LAURENCE GOULD
Told Geologists About Antarctic

On the geological trips in that southern continent there were found rocks ranging from the oldest, such as granites, to relatively young ones: namely, of Tertiary age. Aside from the rocks, Mr. Gould also found pieces of coal, which he burned. At the conclusion of the address various geologists in the audience expressed surprise that the Antarctic explorer had found the coal and the young rocks furnishing evidence of relatively recent deposition of sediments.

Another interesting observation which Mr. Gould made in the Antarctic was the fact that there is still an immense glacial movement in progress northwesterly across part of the country which was traversed by the explorers, even though the ice flow was upon a much greater scale in an earlier period. It is this flow which furnishes the gigantic icebergs that float today in the extreme southern waters. "Although the temperature is always below the freezing point," Mr. Gould said, "the earth which is exposed absorbs some of the sun's heat during the day, and there is a certain amount of melting."

An important result of the overland trip on which the geological work was done was the elimination of a whole mountain range from the map of the south polar region.

Geophysicists Hold First Meeting at San Antonio

San Antonio, Texas. — The Society of Petroleum Geophysicists, a young national organization which held its first annual meeting here Saturday, March 21, in connection with the convention of the American Association of Petroleum Geologists, concluded both business affairs and technical program in one long session extending past the noon hour.

Donald C. Barton, consulting geologist and geophysicist, Houston, was re-elected president of the organization. G. H. Westby, Empire Oil & Refining Company, Bartlesville, Oklahoma, was elected vice-president to succeed E. E. Rosaire, Geophysical Research Corporation, Houston. John F. Weinzierl, consulting geologist and geophysicist, Houston, was re-elected secretary-treasurer. Paul Weaver, Gulf Production Company, Houston, was elected editor of the organization's occasional publications, to succeed Donald C. Barton in that capacity.

Although several papers were omitted by virtue of their authors not being present to read them, the official program of the geophysicists listed nine papers to be read and two to be presented by title.

CALIFORNIA EXPOSITION ENGINEERING SYMPOSIUM

(*Continued from page 22*)

by holding the bit off bottom while circulation and rotation are maintained for considerable periods as in attempting to equalize the weight of the fluid inside and outside the drill pipe to avoid pulling the string wet; to uneven rotational speed; to the failure of the pump to deliver sufficient fluid to carry away the cuttings, resulting in a tendency of the cuttings to crowd the bit; to starting the smaller diameter hole when leaving the casing without properly centering the bit; to sharply dipping hard strata; and to a thousand and one minor causes which will occur to any field man.

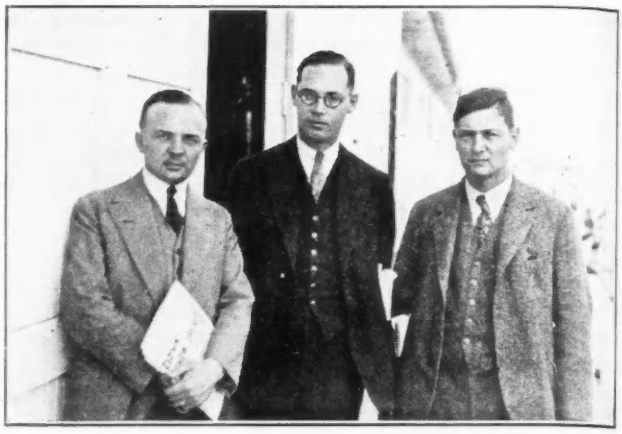
It was pointed out that careful attention to the pressure applied to the bit is the fundamental necessity in making straight hole and that some means of weighing is now generally used. But the question then resolves itself into one of how consistently the knowledge thus obtained is then employed.

After speaking of the method adopted by many operators of placing one or more heavy drill collars immediately above the bit, the author discussed the need for a high degree of accuracy in measuring the weight on the bit. He then spoke of the supplementary means of securing straight holes and stated that core barrels come near to filling the hole to gauge. He further stated that drill pipe of as large diameter as possible should be used; that mud should be kept of the proper consistency to remove the cuttings rapidly; that the bits should be kept sharp; and that crooked drill pipe should be discarded to avoid the possibility of giving the bit an eccentric motion.

A hole that gradually mounts from the vertical to, say, eight degrees and suddenly returns to the vertical again may create more difficulty than a hole that gradually goes from vertical to 30 degrees or more. In the latter case the hole is a gradual curve without sharp kinks and the greatest trouble may be one of excessive wear on casing or drill pipe or of slight resistance to rotation of the drill string. On the other hand, sudden kinks which sometimes occur in holes of the first type cause drill pipe to twist off repeatedly due to the excessive flexing around the comparatively sharp corner and, later, when casing is run, cause it to bind. Holes which spiral to any considerable degree have a similar affect on both drill pipe and casing. It was remarked that directional changes have very little, if any, effect on the hole from a mechanical standpoint.

Mr. Dale felt that the remedial measures which have produced the best results are: first, if a high angle has developed, plug back with cement to the point where the deviation began and redrill; second, if the angle is a small one but may increase as drilling progresses or is such that a sudden straightening to vertical would produce a sharp kink, use the following tools in this manner—with a long, heavy drill collar and a bit which is deemed suitable for the purpose, start at the point where the deviation began and rotate the tools at a moderate speed, moving them up and down for a space of 50 feet or so at a time, allowing gravity to pull them to the lower side of the hole until a shoulder is formed and the hole is made vertical—then a new hole may be started; third, whipstocks may be used but the results are not always all that could be desired; fourth, if it is necessary to sidetrack a fish, the fish should be cemented in as much as possible and the new hole started higher up. The bit may be deflected by a whipstock if the old hole is vertical so that a gradually increasing angle may be developed and the hole allowed to straighten after the fish has been passed.

J. S. MULLEN, *Export Sales Manager, Byron Jackson Company, Los Angeles, and* J. KLEINSMIEDE, *Engineer Bataafsche Pet. Mij., Den Haag, Holland.*



A. B. SCHUMACHER, *Engineer, Bataafsche Pet. Mij., Borneo;* L. J. VAN WIJK, *Bataafsche Pet. Mij., Java, and* V. J. VAN LINIT, *Societe "Astra-Romana," Roumania.*

H. M. GRABLE
formerly drilling superintendent for British Controlled Oilfields, Ltd., who recently returned from El Mene, Venezuela

In conclusion it was remarked that surveying instruments have become widespread in recent years and that, while there is considerable value to be obtained from a complete survey of the hole from top to bottom, most operations are now making an effort to keep the hole as nearly vertical as possible by taking readings at frequent intervals by means of acid bottles or special angle indicating and recording instruments.

Considerable discussion followed this paper and it was brought out that the accuracy of the feed is a limit to obtaining the full value of the sensitiveness being used for weight indication.

Second Paper Presented

A second paper was delivered by Alexander Anderson on the subject of "Comparison of Straight Holes Drilled in 1930 with Those Previous Years." The data he pre-

CALIFORNIA EXPOSITION ENGINEERING SYMPOSIUM

K. TARRELL *and* W. K. LETHBRIDGE
Young English engineers training with Shell Oil Company of California, for foreign service with the Royal Dutch-Shell group.

sented were from wells actually surveyed and were compiled from one million feet of hole. The following table shows the average drift of rotary holes in California for the years of 1928-1929-1930. Mr. Anderson pointed out that these figures took in only the first few months of 1930 since drilling activities had been considerably curtailed during the latter part of that year:

1928	1929	1930
500— 10	7	8
1000— 34	24	25
2000—104	70	76
3000—205	135	141
4000—308	205	189
5000—516	304	258
6000—793	422	402
6500— ..	463	391
7000— ..	535	459

In general it may be said that from the 5000 foot downward the improvement in 1930 over the previous year was about 15 per cent. The author stated that a factor which must be considered in analyzing the tabulation is that almost every company is using some means of getting the inclination of the well as it is drilling. This results in many wells not being surveyed and, naturally, has an influence on the data obtained.

The author also showed the results of his findings in graphical form and cited instances of maximum deviation which he encountered in the different years. For instance, a maximum drift at 6000 feet in 1928 was 2228 feet; in 1929 it was 974 feet, yet the maximum in 1930 was 1662 feet at this depth although the average drift was considerably less than what it had been in the previous year.

From actual surveys it was stated that the spiraling effect of crooked wells is not very great. Corkscrew spirals are very rare except near the surface where the hole is not deviating from the vertical to any great extent. One instance of a crooked hole that was outstanding showed a drift of 1500 feet which was confined in its direction to a strip of 32 feet.

There was considerable discussion in regard to the friction caused by crooked holes. Mr. Anderson felt that there is no solid friction while the drill pipe is being run but several other members present would not agree with his statement. Mr. Decker, Martin-Decker Corporation, believed that friction meant much more than was indicated and that a very slight deviation increases the friction to a very noticeable extent.

Some of the recent designs in surveying instruments were presented for observation together with a description of their construction and operation. G. L. Kothny, Sperry-Sun Well Surveying Company, gave a history of the development of the gyroscopic well surveying instrument and exhibited a gyroscope together with the method being used for its utilization in well surveying instruments. The type he displayed consisted of three parts, the bottom being the gyroscope, the middle a camera and the upper a box level gauge. This instrument is run on a wire line and takes pictures every seven or eight seconds. These pictures give the inclination of the well, its orientation as presented by the gyroscope, the actual depth at which the exposure is made, and the temperature within the instrument. The gyroscope itself is corrected for earth rotation as well as for drift due to latitude.

H. John Eastman described the wire line and magnetic compass instrument and cited instances where this method had checked very closely with the one using pipe orientation. In a well of 4200 feet the two methods were within five feet of each other and in another well of 5215 feet there was only a difference of 2½ feet.

Automatic weight controls for maintaining straightness of holes have now come into practice and are being developed. C. E. Weaver, General Electric Company, described the one being manufactured by his company. It was his contention that light weight and continuous weight make for both speed and straight holes.

Use of Gas in Oil Production Is Discussed at Meter Meeting

Los Angeles.—The use of gas in oil production operations has become of considerable interest to those who are interested primarily in its measurement and was the subject of one of the papers delivered before the Southern California Meter Association at a meeting held on the evening of March 20 in the Technical Hall of the Second Annual Oil Equipment and Engineering Exposition. All types of meters used for fluid measurement—both gas and liquid—were also discussed and several kinds not widely

J. A. IN DE BETOUW VAN DER VOORT, *Mining Engineer, Bataafsche Pet. Mij.;* BOB AMES, *Sales Representative, Champion & Barber;* ENGINEER J. KLEINSMIEDE, *Bataafsche Petroleum Maatschappij.*

known in the industry presented interesting features for consideration.

The fact that a great deal more research work is necessary and further experience is desirable in the use of gas and air for increasing the production from oil wells was brought out by H. N. Marsh, petroleum engineer for General Petroleum Corporation in a paper on "Gas Injection for Repressuring." He first gave a general resume of the use of gas in repressuring operations in the various parts of the country for the benefit of those who had not followed the development of this phase of production. Different conditions naturally affect the use of gas for repressuring work and many sections present widely different problems due to the many factors that have to be considered.

Discuss Deep Drilling and Gas Pressures at A. P. I. Meeting

Los Angeles.—Deep drilling and heavy gas pressures have caused many recent developments in derrick and machinery design besides focusing attention on the recovery of gas being produced with the oil. These pertinent subjects were considered in the spring meeting of the Pacific Coast district of the division of production of the American Petroleum Institute which was held at the Engineer's Club in Los Angeles, on March 20, and three most interesting and instructive papers dealt with the conditions encountered in the Kettleman Hills field. The meeting was preceded by an informal dinner and was presided over by A. H. Bell, chairman of the Pacific Coast district.

A. H. Bell

General superintendent, Continental Oil Company, chairman of Pacific Coast Section A. P. I. Division of Production

Increased power, heavier machinery, large derricks and stronger foundations have been among the important demands made by deep drilling requirements and the "Recent Trends in Rig Foundations and Machinery at Kettleman" was discussed by Arthur F. Wilson, engineer for Standard Oil Company of California. Three types of foundations were described and the labor costs involved were presented. Aside from some improvements on various parts of the equipment, little recent development was noted in drilling machinery in this field.

W. A. Sawdon, publicity director, California Oil Equipment and Engineering Exposition; Van Court Warren, consulting geologist, secretary of Southern California Section of A. I. M. & M. E.; A. B. Menefee, consulting mining engineer and chairman of Southern California Section of A. I. M. & M. E.

The paper considered well foundations to consist of three units. First, the derrick foundation proper which includes the four corner piers, footings and a cellar; second, the rotary machinery foundation; and third, the cable tool machinery foundation. After describing the cellar type and the open type foundations, an open type special was considered for those instances where poor soil conditions require a slab of concrete to distribute the load of the derrick over a large area. The advantages and disadvantages of both wood and steel under-structures were discussed and plans were shown of the types being used in this field.

Mr. Wilson stated that the most popular rotary machinery foundation consists of a concrete slab upon which are constructed two piers, one serving as a foundation for the power unit and the other for the draw works or hoist. These foundations vary somewhat as to size and design, depending upon whatever the operator considers best.

Comparative labor costs were given on the pier, semi-pier and removable types of foundations for rotary machinery and on the cellar and open types for cable tool machinery foundations. It was brought out that when special reduction units are used in place of the cable tool machinery, the new foundation requires an alteration of the concrete mat and piers to meet the new conditions.

In discussing the drilling machinery, the author said that in the early development of the Kettleman Hills field the drilling machinery and attendant equipment were new and considered of the most up-to-date material available. During the past year, it has been possible for many of the operators to carry on development work with used equipment and this eliminated the acquirement of any new drilling machinery of more recent design. He then described the recent improvement that have been added and which have come into extensive use. These include the water-cooled drum, the improved self-energizing brake, the steam-operated reversing mechanism and the balanced throttle valve. Due to the large available supply of fuel gas, steam is now the universal power used for drilling and in order to develop and transmit this power he said that there are two types of rotary machinery in operation. One is the twin engine and four speed draw-works while the other is the hydraulic feed table and mine hoist driven by a three cylinder vertical steam engine.

"The Design and Installation of Gas Trap and Vapor Systems" was ably treated by R. A. March, petroleum engineer for Shell Oil Company of California, who gave concrete examples of methods being used in California to meet the conditions imposed by the big oil and gas producing wells in the state. In a summary of his paper the author states:

"Recent design and methods of installation of oil and gas separators and vapor collecting systems show improvements commensurate with other oil field equipment."

The more important factors in the design of equipment and methods are discussed in this paper and many illustrations were furnished at its presentation to show the actual hook-ups in the field. Data relative to trap capacity with varying operating pressures, the approximate varia-

CALIFORNIA ENGINEERING EXPOSITION SYMPOSIUM

New Officers, Pacific Coast Section, A. P. I.

A. H. Bell, Continental Oil Company, chairman.

Ralph Copley, Standard Oil Company, vice-chairman for Los Angeles Basin.

E. P. Campbell, vice-chairman for San Joaquin Valley.

W. F. Hertel, Associated Oil Company, vice-chairman for Ventura district.

W. C. Corey, sales engineer, Pacific Gear & Tool Works, treasurer.

Norval White, secretary.

A. G. G. SCHOT
Petroleum engineer, Bataafsche Petroleum Maatshappij, Tjepoe, Java, D. E. I.

P. TH. C. VAN ADRICHEM
Shop superintendent, Bataafsche Petroleum Mij., Pladjoe, Sumatra, D.E.I.

tion in "free-gas" capacity of oil and gas separators with varying oil-gas ratios, and the variation in open-flow capacity of 12-inch nipples with vacuum and pressure were shown graphically. These approximate capacities were based on available oil and gas separating equipment were given with particular attention paid to problems pertaining to multiple stage separation. Of especial interest were the average cost data for various combinations of oil and gas separators and for vapor systems since the figures furnish a means for estimating the installed cost of single or multiple stage installations. It was pointed out, however, that at the present time both the design and installation of separators, vapor collecting systems and the necessary auxiliary equipment are undergoing rapid development to meet the requirement for handling the production of wells producing large quantities of gas and oil.

In speaking of vapor collecting systems, Mr. March advised that they serve a dual purpose on crude oil tanks since they not only conserve the lighter oil fractions but also provide protection against fire. The special equipment normally used for the collection of vapors from crude oil tanks were grouped into the four general classes of: (1) vacuum and pressure relief valves for protection against bulging or collapsing; (2) flame arrestors, used to prevent the possibility of fire being transmitted through the interconnecting lines between tanks from external sources; (3) vacuum or pressure control units, for maintaining a uniform pressure or vacuum in the tanks by automatically operating valves on both the vacuum gas line and the pressure gas line; and (4) gauge hatches, for use in gauging the oil in the tanks.

The capacity of vapor system equipment was discussed to some extent and in regard to pipe line sizes the author advised the calculation by use of the published formulae but remarked that the more common practice is to use sizes that have proved satisfactory on existing systems. Typical layouts for well tanks, for a group of lease storage tanks and for a group of tank farm tanks were shown in connection with descriptions of the installations themselves.

Following the treatment of actual installation as being made in the California fields, P. S. Magruder, General Petroleum Corporation, presented a paper on "Theoretical Considerations Involved In Multiple Traps and Vapor Systems". The laws in physics known as the Gas Laws are utilized in theoretical considerations involving oil and gas separation and vapor recovery. These are rules governing the behavior of a perfect gas and, while there are certain deviations found when they are applied to complex mixtures of the hydrocarbon vapors in high concentrations, the author stated that such errors as follow their use are not serious enough to detract from their value in estimating work. He discussed the application of Boyle's Law, Gay-Lussac's (or Charles) Law, Dalton's Law of Partial Pressures, and Raoult's Law, and showed the use of their formulae in calculation.

On rules of solubility it was stated that (1) a gas will be equally soluble in all solvents at a given partial pressure; (2) the solubility is proportional to the partial pressure; (3) the gas with the higher critical temperature and boiling point will be more soluble than one with a lower critical temperature and (4) the solubility of a gas diminishes with increasing temperature. The application of these rules was discussed with reference to oil and gas separation.

The factors affecting gasoline content of gas leaving the primary trap were considered in high pressure separation, and the multiple trap installation was treated from the theoretical angle. Data were furnished in both graphical and tabular form. In his summary Mr. Magruder called attention of all petroleum engineers to the possible economies that may be effected by utilizing natural well pressure to the greatest extent possible in the disposal of the gas. This applied not only to such gas as is used for gas lift and sales, but also the gas delivered to the gasoline plants for treatment. He believed also that separators of larger diameter or in greater numbers should be installed at new wells in order that the oil and gas come more nearly into equilibrium. This condition will result in not only a lower gasoline content in the gas leaving the trap, but will also reduce the volume of low pressure gas that must either be handled by compressors or wasted.

In closing, the writer recommended to the petroleum and gas engineers that more study be given to the problem of oil and gas separation than has been evidenced in the past. He felt that effort so expended would undoubtedly bring forth some surprising results from which all will benefit.

Promising Arkansas Wildcat May Extend Irma Production

Shreveport.—Smitherman and McDonald, after bailing and swabbing salt water with a show of oil at 1194 feet in Bodcaw 1, SE NW NW Section 16-15-22, a wildcat in LaFayette County, Arkansas, during the week ending March 21, cored ahead into four feet of oil sand from 1194 to 1198 feet and shut down to await orders. This test is eight miles southwest of the heavy oil producing area in Irma, Nevada County, where production is found at approximately the same depth.

No completions or new locations were made in Arkansas last week.

Decision on East Texas Curtailment Is Delayed

Austin, Texas.—The problem of arriving at an equitable figure of proration for Texas presented no little difficulty to the central proration committee of which Robert R. Penn is chairman, in view of the fact that a number of companies interested in the purchase of East Texas production failed to make nominations in answer to questionnaires sent out by the committee. As a result, the hearing held by the railroad commission failed to have presented at its session on Tuesday, the customary report of nominations for the various producing districts, lack of which was openly attacked by Former Governor Dan Moody, representing the interests of the East Texas area.

Following the opening address made by Robert R. Penn in which was outlined the history and development of proration in Texas, Governor Moody hotly protested the lack of a definite report of the central proration committee's recommendations as to what quantity of oil shall be produced in East Texas. Governor Moody stated that a large number of operators and land owners from the East Texas area came to Austin by special train in order to present their arguments against the adoption of proration in that area and expected to find the railroad commission ready to offer some figures as to what the maximum recommended outlet of that area should be. He countered that statement with the retort that East Texas operators had no inclination to listen to lengthy discourse on proration in general but were chiefly concerned with what the railroad commission would order as the maximum allowable production of that area. Governor Moody further stated that regardless of what that figure may be the interests he represented are prepared to carry their cause into the higher courts. This statement brought a howl of approval from the large gathering of East Texas operators present, much to the disapproval of Chairman Terrell of the railroad commission.

Despite protests from former Governor Moody and other attorneys representing the East Texas area, Chairman Terrell allowed testimony to be presented concerning the results of proration in other districts of the state outside of the East Texas area. It developed that the testimony presented by the various proration umpires would be subjected to severe cross-examination. It was the cross-examination that made the hearing develop into a rather long drawn-out affair that promised on Tuesday evening to be projected over a period of several days.

Perhaps the most valuable part of the testimony offered was the evidence that few of the alleged large potentials of proven Texas oil areas could for very long be realized if the lid was completely removed on oil producing properties. Evidence presented under cross-examination of both sides of the proration question by umpires Capers of Winkler and Ector Counties; Richmond of Yates and Crane-Upton; Hull of North Texas and Golson of West Central Texas, brought out evidence that from 70 to 80 per cent of the indicated potential production of these areas would quickly become dissipated if proration was lifted. In fact production as is indicated in the Yates pool where a wide open flow would result in 3,500,000 barrels daily would completely ruin that area within six months from the date that proration was abandoned. Under restriction, it was stated, this area would probably be productive over a period of 21 years.

In practically all districts for which expert testimony was offered it was shown that proration has undoubtedly proven a measure of conservation and a means of greatly prolonging the life of flush and semi-flush pools within the state.

Receipt of missing nominations gradually being received by the central proration committee brought the announcement from Mr. Penn that a definite report would be presented to the commission on Wednesday morning, which would include a figure of nominations for oil from East Texas.

Wichita Falls A. P. I. Chapter Meeting Holds Wide Interest

Wichita Falls, Texas.—The Wichita Falls chapter, division of production of the American Petroleum Institute held its monthly meeting here March 24, 1931. Discussions on the various phases of the oil industry as concerns the division of production included a talk on "Pulling Machines" by G. W. Purswell, Continental Oil Company; "Water Softening for Oil Field Use" by A. H. McPherson, consulting engineer; "Engine Foundations," W. H. Boden, National Supply Company, and "Pulling Machines," A. A. Lowder, Magnolia Petroleum Company.

Other topics of discussion on the program were; "Intermittent Gas Lift" by H. M. Stauffer, Panhandle Oil Company; "Salt Water Pumps and Sprays," Bob Ryle, Petroleum Producers Oil Company; "Selection of Key Wells" by Tom L. Coleman, consulting engineer; "Balancing Powers," R. E. Bridges, Humble Oil & Refining Company; "Care of Rod and Tubing," Van Eman, Gulf Production Company, and "Use of Old Stuffing Boxes" by C. A. Morris, Humble Oil & Refining Company.

The subject of the April meeting will be "Advantages of Unit Operations Over Present Operations in Oil Fields." The field aspects of the subject are to be discussed by E. V. Foran, Fain McGaha Oil Company; lease and legal aspects will be discussed by A. C. Smith and a summary of the subject will be presented by Roy B. Jones, president Panhandle Refining Company.

Denver, Colo.—Berthoud Dome in Larimer County, Colorado, may yet prove to be worth more than it has ever indicated previously. Standard Oil Company of Colorado (independent) has a showing for some 300 to 500 barrels per day in its Hertha 1, which, after a shot at 3792 feet, has 2500 feet of oil standing in the hole, with no water and some gas; hole has bridged and cleaning out is in progress. The structure is south of the Wellington-Fort Collins district, and north of the old Boulder field.

Bozeman, Mont.—The new natural gas pipe line from the Dry Creek field, Southern Montana, to this and nearby towns is to be laid immediately, work having already been started. Material for river crossings has been ordered, and the same will be put in at once. It is expected that the work will start on the main line early next month. The operation is being carried on by the Ohio Oil Company.

Chester W. Brown, whose connection with the oil industry dates back to 1887, has resigned as director of production and exploration for Union Oil Company, and will devote his time to enjoyment and to his private affairs. He continues as a director of the company. Mr. Brown went to Peru in 1896, drilling a number of wells in that country. He returned to California in 1909. He was president of the California Oil & Gas Association in 1927-28 and has been a director in the association since 1918.

Personal Mention—Men You Know

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William D. Waltman, representing Franco Wyoming Oil Company, Franco Western Oil Company, McElroy Ranch Company and Isolantite, Inc., will transfer his general offices from New York to 601 Edison building, 5th at Grand, Los Angeles, California, on May 1. He will still retain his offices at 9 Boulevard de la Madeleine, Paris, and 422 First National Bank building, Denver. His new residence address will be Box 37, La Mesa, California.

W. A. Jesson, formerly in charge of The International Derrick & Equipment Company's branch at Oklahoma City, has been transferred to Kilgore, Texas, together with Donn DeWar, field engineer who has been in West Texas. A complete line of the company's equipment will be stocked at Kilgore.

C. E. Olsen, president, Gearench Manufacturing Company, Houston, returned March 23 from the Oil Equipment and Engineering Exposition, Los Angeles, where he spent a week in the interest of getting distribution for his company's line of pipe tongs and wrenches now being introduced to the oil fields.

R. V. Whitman, for eight years in Venezuela with Standard Oil Company of Venezuela and Creole Petroleum Corporation as superintendent and chief engineer, is now associated with Joseph Breslove, consulting engineer, Oliver building, Pittsburgh, Pennsylvania.

San Antonion Geological Society Has New Officers

The recently elected officers of the San Antonio Geological Society have become active, replacing the officials who were in charge of arrangements for the annual convention of the American Association of Petroleum Geologists in San Antonio last week.

The new officers are as follows: H. H. Cooper, consulting geologist, president; L. W. McNaughton, Amerada Petroleum Corporation, vice-president; J. D. Hedley, Barnsdall Oil Company, secretary and treasurer; D. R. Semmes, past president and member of executive committee; Ed W. Owen, L. H. Wentz, Oil Division, executive committee.

The officers being replaced are as follows: D. R. Semmes, president, Charles H. Row, Sun Oil Company, past president; H. H. Cooper, vice-president; Ed. W. Owen, secretary; Joseph M. Dawson, Gulf Production Company, member executive committee.

—Powell Studios

H. H. COOPER

Consulting Geologist, New President San Antonio Geological Society

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Tom Gaibraight, geologist for The California Company, has been placed in charge of a zone office established by the company in the Smith-Young Tower building, San Antonio. District offices of the company are maintained at Dallas, and a subsurface division of the geological department has been moved from Dallas to Midland, with Fred Wright in charge of the subsurface work.

Sidney H. Keoughan, very well known Denver oil operator and once head of Continental Oil Company, has recently become enthusiastically interested in oil and gas explorations in Germany. He is particularly hopeful for deep drilling in that territory. With a number of associates he has organized North European Oil Company and taken over concessions on several million acres in the province of Hamburg. Germany has an annual consumption of 40,000,000 barrels of petroleum, and produces only a small part of this requirement. Home production is protected by a tariff of $4.16 per barrel. The retail price of gasoline in Germany is around 37 cents per gallon. North European Company now has two geologists mapping its concessions, and is preparing to ship material from this country to start drilling operations there soon.

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L. W. MCNAUGHTON

Amerada Petroleum Corporation, Vice-President

—Powell Studios

J. DAVID HEDLEY

Barnsdall Oil Company, Secretary-Treasurer

—Powell Studios

D. R. SEMMES

Consulting Geologist, Past President

—Powell Studios

EDGAR W. OWEN

L. H. Wentz Oil Division, Executive Committee

Oil and Gas Pipe Line Activities

▼ ▼ ▼

Start Construction of East Texas-Shreveport Pipe Line

Shreveport.—Ford, Bacon and Davis, Incorporated, of New York City, was awarded the contract for construction of Arkansas Fuel Oil Company's eight-inch electrically welded line from the company's Lathrop lease in the William Robinson Survey, Gregg County, Texas, to Louisiana Oil Refining Corporation's refineries in Shreveport. The line runs a distance of 66 miles. Orders for the pipe were placed some time ago. Actual construction of the line will get under way this week. Equipment was already being unloaded March 23. William von Phul is representing Ford, Bacon and Davis, Inc., in Shreveport, and an office is being opened here to handle the construction work details. Equipment is also being unloaded for a pumping station at the Texas end of the line, construction of which starts this week.

Work Held up on Proposed Pipe Line for East Texas

Houston.—The Texas Pipe Line Company is marking time with respect to proposed expansion work in East Texas pending outcome of pipe line legislation which is scheduled to be voted upon by the state legislature now in session at Austin.

Although surveys have been made, sites for pump stations have been secured, and in some instances materials have been moved in, Texas Pipe Line Company does not propose to proceed with any construction work so long as uncertainty exists regarding the proposed pipe line laws; and the company has announced intentions of sacrificing work that has been done through complete abandonment of plans for the East Texas project in the event of passage of laws which the company would regard as too stringent to warrant construction of the contemplated market outlet. In the latter event, the company proposes to build a 50-car tank car rack near Kilgore on the International-Great Northern Railroad.

According to plans which have been formulated, The Texas Pipe Line Company would furnish initially approximately 25,000 barrels market outlet daily for Rusk and Gregg County crudes, with possibilities of further increase through additional booster stations.

The plan is to build 50 miles of 10-inch electric welded trunk line from an initial station near Kilgore almost due southward to a pump station site at Douglass, Western Nacogdoches County, where connection would be made with the company's existing eight-inch line running from Corsicana to San Augustine. The proposed Douglass pump station would be Diesel engine driven.

If the East Texas system is built, there will be erected four 55,000-barrel steel tanks adjacent to the proposed Douglass pump station.

From the Douglass station the East Texas crude would be routed in both directions in the existing Corsicana-San Augustine eight-inch unit, part of it moving southeastward via San Augustine into the system extending on from that point to tidewater, while the additional volume would go to Corsicana and at that point into The Texas Pipe Line Company's existing system which extends southward via Humble station, Harris County, to tidewater.

To increase capacity of that Corsicana to tidewater unit, The Texas Pipe Line Company will build three electric booster stations between Corsicana and Humble in event the East Texas project materializes. Sites for those proposed stations have been acquired, and materials are being assembled so as to expedite construction work if it is decided to go through with the above outlined plans.

Derby Oil Plans Pipe Line From Reno County to Wichita

Wichita, Kansas.—Derby Oil Company is resurveying right-of-way for its three-inch line to connect Study, Turner et al's Haury 1 SEC NW, Section 1-23s-4w, a recently completed wildcat in northeastern Reno County. It was originally planned to build the line from the east but deep sand through which it was difficult to transport material caused a change in plans. The new line will approach the well from the north connecting with the Derby-Voshell line at a point approximately five miles from the well. From this point oil is transported to Bell station east of Burrton from whence it is tanked to Valley Center and pumped back into a line for transportation to the Wichita refinery.

Derby Oil Company had been purchasing oil from the new well through its loading rack at Burrton approximately 2½ miles southeast of the well. Reserve Petroleum Corporation and Derby Oil Company have completed rig for their Goering 1 SW NW NE Section 1-23s-4w, three locations north and one east of the Haury well.

Longview, Texas.—Atlas Pipe Line Company, Shreveport, has purhased three 80,000-barrel steel tanks to be erected on its recently acquired pipe line station site in the S. P. Ford survey to the southwest of Longview, and will also proceed at once in constructing 75 miles of eight-inch line from this site to Shreveport, where connection will be made with the Louisiana-Arkansas trunk line system. Gathering systems will be extended from the Longview station to the Longview-Lathrop and Kilgore fields.

Houston.—Houston Oil Company is nearing completion in construction of its combination six- and four-inch screw jointed pipe line from the Kilgore field, northern Rusk County, to 20-acre tank farm and loading rack site on the Cotton Belt railroad adjacent to the north boundary of the town of Amigo, Smith County, located about seven miles northeast of Tyler. At the Amigo site the company has completed erection of two 80,000-barrel steel tanks, and work is reported progressing on a tank car loading rack on the same tract of land.

Dallas, Texas.—Ford, Bacon & Davis, Inc., pipe line engineering concern with headquarters in New York City, has established a district office here in the First National Bank Building, with William von Phul, Jr., in charge. A. W. Cherry, general superintendent, has also been assigned to the Dallas office.

Oklahoma--Kansas Field Notes

FLOYD SWINDELL, *Staff Representative, Tulsa, Oklahoma*

Oklahoma City Production Shows Decided Upward Trend

Oklahoma City.—Estimated daily production for Oklahoma was on a decidedly upward trend when all pools in the state averaged 570,880 barrels during the week ending at 7 a. m. Saturday, March 21. The Oklahoma City pool accounted for about 25,000 barrels of the increase and the remainder was from the Seminole district where six pools are under a 10-day potential gauge. New work took a boom in the Oklahoma City pool where 10 permits were granted for tests in the townsite area. T. B. Slick Estate announced locations for Classen-Edwards Nos. 2, 3, 4 and 5, in the SW of Section 3-11n-3w, Phillips Petroleum Company staked locations for three tests in the SW of Section 10-11n-3w. H. H. Patton et al were granted a permit to drill at 10 southeast Twenty-Third street inside the city limits, and Skirvin Drilling Company is reported to have announced locations for two wells on the Booker T. Washington Park tract which was recently acquired by that company. During the week ending at 7 a. m. March 20, Sinclair-Texas Pipe Line Company's runs from the pool averaged 49,000 barrels, a little over 40,000 barrels of which was oil purchased from Phillips Petroleum Company, Hall and Briscoe, Anderson-Prichard, Blackwell Oil & Gas Company-Jones Drilling Company, Mid-Texas Oil & Gas Company and others. Storage conditions in the pool are said to be improved in spite of the increased runs which have been noted during the past few weeks.

One important ruling recently laid down by the corporation commission will prevent any well taking allowable production during any period until its potential has been determined. This means that all newly completed wells will be on potential gauge from the start whereas an option has heretofore been granted. The first production could be charged against the well's allowable production and a subsequent gauge taken for potential if the operator so desired.

Oklahoma City Petroleum Company's Lively 1, SE NW SE Section 15-11n-3w, which came in early in March for an estimated 4000 barrels daily but bridged up the hole, is attracting interest on the west side through its showing while cleaning out. Recently it flowed 443 barrels in 15 minutes while cleaning out about 1100 feet from bottom and is now being estimated good for 2000 barrels an hour. Eason Oil Company and Champlin Oil & Refining Company are completing lines for an initial test. The well is an east offset to Lincoln Oil & Refining Company's (formerly Gwin Drilling Company's) Stotts 1, which is now shut down at 5803 feet and is located in an area which has been considered an unlikely spot for gusher production. Four wells were completed during the week. Phillips Petroleum Company, which has been sensationally successful in the northwestern part of the pool, made two completions in Section 10-11n-3w. Its Winstead 1, SE NE SW, had top of the Wilcox at 6452 feet and flowed 3697 barrels in four hours from 6562 feet, still in the sand. The Robb 1, NE SW NE SW, an irregular northwest diagonal offset to the Winstead 1, produced 2550 barrels in four hours from Wilcox sand topped at 6425 feet and penetrated to a total depth of 6548 feet. Both wells are on the southwest edge of the pool and are important. Indian Territory Illuminating Oil Company's Ferndale 6, CNW SE NE Section 11-11n-3w, drilled 221 feet of sand to a total depth of 6501 feet and produced only 309 barrels in eight hours cutting seven per cent water and one per cent mud. It is located in the older part of the pool. Patton, Wilcox Oil & Gas Company and Anderson-Kerr completed their Wright 1, NW NE NW SW Section 10-11n-3w, at an estimated rate of 16,000 to 20,000 barrels daily; total depth is 6512 feet.

Decline Factor Theory Vindicated in Seminole

Tulsa.—Ray M. Collins, state proration umpire for Oklahoma, has been more than vindicated in his application of a three per cent per month decline factor to pools in the Seminole district and charges that the Oklahoma City pool was being discriminated against by potentials applied in the Seminole district have been proven unfounded through recent 10-day gauges. Six pools of the district went on gauge on March 5 and proved that they could consistently produce in excess of the estimated potential. On March 16, the second group of six pools were placed on a similar test with the following results during the first five days:

Pool	Estimated Potential	Gauges at 7 A.M. March 16	March 17	March 18	March 19	March 20
Little River ..	41,833	50,531	51,682	49,782	48,213	48,315
E. Little River	18,379	13,189	12,368	11,739	11,337	11,346
Carr City* ..	3,561	6,499	6,778	6,676	6,577	6,712
Mission	12,002	18,861	17,494	16,742	17,013	17,113
Bowlegs	23,955	29,052	29,718	29,366	29,503	29,272
E. Earlsboro ..	35,037	33,455	28,997	29,676	28,952	29,033
Total	134,767	151,587	147,037	143,981	141,595	141,791

*Incomplete.

On the basis of incomplete reports from the settled area of the Carr City pool the six pools produced an average of 145,198 barrels daily or 10,431 barrels daily in excess of the estimated potentials.

Droppleman et al defined the west and southwest limits of production in the Wilcox horizon when their Lack 1-A SW SE NW, Section 30-8n-8e, had a hole full of water at 3980 to 3987 feet. It is a west offset to Deep Rock Oil Corporation's A. B. Douglas (50 Acres) 4, one of the wells recently figuring in a sensational fire.

One of the early gages after the derrick had been rebuilt showed only 1355 barrels of fluid in 21 hours cutting 55 per cent. Burke-Gries Oil Company's Henshaw 1, NW NE SW, of the same section had the base of the Gilcrease at 3097 feet and was drilling ahead at 3113 feet in shale with no oil showing. Mid-Kansas Oil & Gas Company's Davis 5, NW SE NW Section 30-8n-8e, twin to the company's Davis 4, had the Wapanucka at 2992 feet and cored a show of oil in sand at 3050 to 3057 feet.

The northwest edge of the Wanette pool was further defined when J. E. Crosbie and Mid-Kansas Oil & Gas Company went one foot below the base of the sand at 3612 feet and swabbed only 130 barrels of oil and 120 barrels of water in their Miller 1, SW NE NE Section 22-6n-3e. This sector of the pool is located on a fast north and northwest dipping limb of the structure and has been very treacherous

even though it is directly north of the discovery lease upon which several good wells have been completed. Mid-Continent Petroleum Corporation's Archer 2, SE SW SE Section 14-6n-3e, new producer on the northeast edge of the pool, is producing at the rate of about 1200 barrels daily but will be placed under proration.

Magnolia Petroleum Company topped the sand at 2736 feet and set 8¼-inch casing in its Wood 3 SW NE SW, Section 29-6n-6e, on the south end of the Konawa pool. A showing of oil was encountered while coring in sand at 2740 to 2760 feet.

Production In Kansas Continues to Decline

Wichita, Kansas.—Production from Kansas pools continued to drop slightly during the past week when estimated daily average was 109,450 barrels, a decline of 1700 barrels under the week before. Operators are taking a decidedly optimistic viewpoint over the possibilities of legally prorating production under the new law recently passed by the legislature and which Governor Woodring has announced intention of signing. Details of the proposed law have not been made available but it is understood that the original intention of patterning after the Oklahoma regulations was not closely followed. A gas energy provision seems to be the main point upon which operators hope to bring the state in line with the efforts that are being made in other states.

The Ritz-Canton area continues to be the only activity of any consequence and is proving a blessing so far as oil field workers are concerned. One operator has put a three eight-hour shift working plan into effect and others probably will follow. There are now 40 drilling wells in the area several of which have cemented the last string of casing and will be drilling into the chat within a few days. Madison-Shell Petroleum Corporation et al definitely defined the northeast limits of that production when their Russell 1, CSW SE Section 1-19s-2w, found the chat low at 2964 feet and had nothing but water. It will be drilled to the Viola lime in search of Wilcox production. Courtney B. Davis and Shell Petroleum Corporation's Sellers 1, SE SE SW Section 19-19s-1w, flowed 660 barrels the first 12 hours after being shot with 20 quarts in Viola lime at 3412 to 3425 feet. This well is one-half mile north of the group of four original lime producers and is the northeastermost producer in the lower horizon. Lario Oil & Gas Company and Shell Petroleum Corporation encountered chat at 2912 feet in their Boal 1, CSE SE NW Section 24-19s-2w, in the area between the gas and oil production. This is three feet structurally higher than Youker and Shell Petroleum Corporation's Gratton 1, SE SW SW Section 24-19s-2w, slightly over a half mile southwest. The Gratton 1 was completed as a 10,000,000 gasser with a small show of oil late in December, 1930. Derby Oil Company and Empire Oil & Refining Company cored a show of oil in Viola lime at 3408 to 3418 feet in their Domsch 1, NE NE NW Section 6-20s-1w, 1½ miles south of the discovery well. Considerable interest will follow drilling of the plug in this test. Several other wells in the vicinity have tested the Viola but none have been successful in locating more than a show of oil and have either been abandoned or plugged back to the chat.

Eastborough Pool

Eisenhour et al's Eastborough Estates 1, Lot 6, Block K of the addition in Section 19-27s-2e, filled up 1500 feet in 12 hours and swabbed 60 barrels on a two-hour test from chat at 2981 to 2984 feet, making the 39th producer in the pool. It is reported making about one barrel of water per hour. The proportion of water to oil is gradually increasing in a majority of the wells and several are due to be plugged.

Agate Oil & Gas Company is underreaming six-inch casing in its Frank Rockefeller 1, SEc Section 6-13s-12w, about 10 miles northeast of the town of Russell in east central Russell County. Three shows of oil have been encountered, the first being in Oswald lime at 3044 feet. This showing was estimated at six barrels per hour by Austin Drilling Company which was operating the test at that time. The present operators took over the well at that time but failed to make a producer. The second show was in a break in the Oswald at 3142 feet but this too failed to yield commercial production. Present total depth is 3374 feet in conglomerate where it is making considerable amounts of water. The six-inch hole will be underreamed and casing set below the water so that drilling can be continued probably to the Siliceous lime. Geologists say the test is running structurally high and predict that it has a chance to produce from the lower horizons.

Two Wells in Tatums Area Due for Early Completion

Ardmore, Oklahoma.—Two wells are shut down waiting on cement to set on the last string of casing in the Tatums pool, Carter County. Carter Oil Company's Paul Robb 1, NW SW NW Section 19-1s-2w, on the east edge of the pool, cemented casing at 1749 feet after encountering sand and shale at 1741 feet. Total depth is 1896 feet, 40 feet below the base of the sand.

Amos Drilling Company has been delayed by adverse weather and will not drill plugs until the middle of the week in its Hooks 2, SW SE SE Section 13-1s-3w, on the northeast edge of production. Broken sand was logged from 2005 to 2108 feet and solid sand from that depth to the total depth of 2199 feet. Magnolia Petroleum Company has abandoned its R. F. McCrory 1, SE SE SE Section 10-1s-3w, wildcat test three-fourths of a mile north of production. Total depth is 4240 feet. The Texas Company is drilling at 2330 feet in its Eaves 6, NE SW SW Section 24-1s-3w, on the south side of the pool and Magnolia Petroleum Company is drilling below 2400 feet in its D. C. Burton 1, NW SE NW Section 30-1s-2w, one-fourth of a mile southeast of production.

Scouts and Land Men Will Not Hold Annual Meeting

Tulsa. — The annual convention of the Mid-Continent Scouts and Land Men's Association will not be held this spring, following a decision of the board of directors to postpone the meeting indefinitely. Suggestions from many chief scouts that the meeting not be held was responsible for the decision.

In a letter George A. Schwab, chairman of the board, says:

"The usual annual papers prepared by the members are to be compiled and published this spring, as well as a new hand book for scouts. The hand book will be distributed to active members only, who are in good standing.

"The annual field trip to the Arbuckle Mountains and other points of interest will be held some time in the fall.

"Present officers and directors of the association will remain in office until the convention is held, possibly late in the summer or during the International Petroleum Exposition in 1932."

News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

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Begin Activity Toward Deep Testing at Huntington Beach

Los Angeles.—Rumors have been current for many months that the old Huntington Beach field is due for renewed town-lot activity, but only in recent weeks have developments indicated that the predicted drilling campaign is now drawing near, in an effort to produce the lower and deeper sands. At the end of the week, 12 strings of tools were active, with several other drillers idle for different reasons. One scout who visited the field the past week reports that some 15 additional strings will be running within a few weeks, all seeking the deeper pay.

Superior Oil Company's Fee 1 has been shut down for some weeks at 7491 feet, with 4½-inch cemented at 7490 feet. It is known that oil sand has been cored in the bottom of this hole. W. E. McCaslin's Number 17 continues to bring up cores of oil sand below 7200 feet, after a string of 4¼-inch had been cemented at close to 6900 feet. Gas is also present, with reports early in the week that the pressure became dangerously strong a few days ago, forcing extra precautions. As high as $18,000 has been paid for a drilling site (three town lots) and in a number of instances $10,000 to $12,000 have been paid for other sites. All of the purchases or leases are being made in the town lot area.

Long Beach is rather quiet, although there are 58 wells drilling and four wells rigging up. One well, good for only 60 barrels, was completed last week at 7050 feet.

Production is holding up fairly well at Santa Fe Springs with practically no new work being done. Two wells were completed for total flush of 200 barrels. To give an idea of the long life of these wells, Union Oil Company's Bell 40 might be mentioned. It was completed for about 1400 barrels in the Nordstrom zone two years ago. It had been shut down for four months and the other day it was tested to see what it would make. It flowed 3000 barrels of 33 gravity oil together with 1,250,000 cubic feet of gas. The cut has increased to about 25 per cent.

The Playa del Rey, or Venice, field, remains a disappointment with only 21 wells now drilling. Four new wells the past week furnished only 2400 barrels new oil. One of the new wells was completed in the deeper zone for 1500 barrels.

At Ventura Avenue, Shell Oil Company's Taylor 68 was completed for 1200 barrels of oil, cut 30 per cent, with bottom at 4500 feet. It was killed and is being cleaned out. Another test will be made.

The Kettleman Hills North Dome Association is now taking over the physical properties under the unit plan, and in a short time both the association and Standard Oil Company of California will start new work. It is expected that around 25 rigs will be running within a short time, which should bring about a substantial increase in production by fall. The discovery well will be killed as well as Continental Oil Company's offset. Engineers are now working out plans for killing the two wells, which have been producing more or less out of control for many months.

The feat of floating in 6763 feet of 13⅜-inch seamless casing in North American Consolidated Oil Company's Blauvilt 1, 36-21-17, attracted considerable attention this week, since this is the heaviest string of casing ever cemented. The job of running in and cementing occupied slightly better than 18 hours. A Baker float valve was used to float in the casing. Several tool manufacturers sent photographers to get pictures of the activity, but all except one were too late to get pictures. This well is located on the east flank of Kettleman Hills.

Drilling at Low Level With Prospect of Continuing So

Los Angeles.—Drilling in the proven fields of California has dropped to a very low level and sentiment has gone a long way toward the steady decline. During the past 20 years drilling has gone from one extreme to another but has never failed to swing back when acted upon by supply and demand. Such areas as Long Beach, Santa Fe Springs and other settled fields are doing little to maintain the average number of drilling operations. As short as fields operations are there is ample reason to believe that within a reasonable time the tide will turn and the average of the past few years will be reached. Operators in a few of the settled fields are considering a resumption of drilling operations as soon as conditions will warrant. It is true that field work will start in a modest way, but at the first signs of an increased demand for oil many companies which are not carrying large stocks will seek to develop a permanent supply of light crude. Whether the present slump is the tail end of the depression cannot be told at this time.

California is being affected by development in other sections and by the fear of over-production where curtailment was supposedly in effect. Wildcatting has not been affected as much as operations in proven fields but such a course is natural during slumps in the developed sections. Major companies are not pioneering as much as expected, due to their desire to prove that they are sincere in efforts to reduce field work. Leasing has been confined largely to sections near proven fields or where there is a possibility of extensions, such as the North Belridge district. A gradual resumption of operations in the San Joaquin Valley section should be attributed to the influence of Kettleman Hills and other districts largely dependent upon the Temblor formation for production.

Fields producing heavy oil have been virtually dead for more than a year. Operators in these fields are anxious to make a better showing, but have been hindered by the over-supply of light oil. Such fields as Round Mountain, Kern Front and Maricopa Flat are capable of producing much more than the present potential. Kettleman Hills looms as the most dangerous field of all and despite the unit plan of operations and other forms of control, will probably become the center of activity. The cost of a single operation is so high here that a large drilling campaign should result in the use of much equipment. Since more than 20 wells are shut down over the sand, it may be possible to drill these in and avoid extensive field work for

some time. There is a growing restlessness in the field which may be curbed in time to stop what would ordinarily be an extensive drilling campaign. Nearly all of the fee land outside that owned by Standard Oil Company of California remains outside of the unit plan and will be drilled at a steady rate. This will necessitate offsetting by the unit operators.

Lower Crude Prices Effects New Drilling in California

Los Angeles.—The effect of proration upon drilling has been pronounced in California. The recent crude price slashes have been met with statements from several smaller operators to the effect that if curtailment is maintained, so should prices be maintained. There is no doubt but that low crude prices are acting as a further check on activity. The tendency to increase field work is being smothered because development of a greater production would not create a better market. Many companies with little or no storage have considered development of leases but that is as far as it can go under present conditions.

Long Beach has been affected sharply by the poor demand for crude and little more than half as many wells are drilling now as were in the active column six months ago. Fear that curtailment measures will not allow them to dispose of a full production has limited new locations for several months. Small operators in this field do not have as much oil shut in as generally believed.

The North Belridge field was greatly feared for a time but it has been definitely established that the Temblor zone will be productive only over a narrow strip. Several wells have failed to find the formation productive and a much smaller potential yield than thought will be the result.

Tests in the Lost Hills field have not been conclusive but they certainly have not been impressive. Both deep wells have shown salt water at some level and the threatened flood of light oil from the Temblor may prove to have been a stroke of the imagination. Since this field is directly in line with Kettleman Hills, it has been looked upon with awe, but it may not yield a barrel of oil. It is favorably located and is directly in line with the South Dome, but even this part of Kettleman Hills was a failure and Lost Hills may also prove disappointing.

Shell Oil Company's Williams 1, the deepest well in the world, refused to show any life when swabbed to 4300 feet. This 9700-foot Semitropic test has attracted world attention and the production test is more in the nature of an experiment than a conviction that commercial production should be obtained.

Playa del Rey seems utterly spent and the economic phase of the industry certainly will not be affected much by the action of this area. The exodus of promoters has about been completed and only the more stable operators are left to develop their holdings.

Several fields will be tested in the deep zones as soon as conditions warrant. The hopes of a few operators lie in the possibility of deeper production and they feel that it will be easier to develop these formations than to secure additional acreage. Santa Fe Springs and Long Beach are perhaps the chief fields which have little possibilities below present development.

Use of Gas for Drilling in East Texas Producing Area

Longview, Texas.—At the middle of this week 74 drilling rigs in the Joiner, Kilgore and Longview areas, East Texas, were being run by natural gas, following expansion by United Gas System of its already existing facilities in that territory to include connections to the sites of numerous oil drilling operations.

Keeping pace with the rapid expansion of the East Texas field developments, United Gas System representatives have been running service lines and setting meters within short time after closing of contracts for supply of gas for drilling. Four crews of workmen are maintained by the company to deliver this service, and additional pipe line crews are completing extensions to the company lines which will care for future drilling requirements.

Discovery of oil in the Joiner pool found the East Texas area served by United Gas System with a 16-inch main pipe line from Waskom through Longview to Dallas and Fort Worth, and a 10-inch line from Waskom to a point near Longview, where it branched into two eight-inch lines and extended from Longview to Palestine and from Longview to Tyler.

The towns of Longview, Henderson and Kilgore all were served by natural gas through lateral lines off the various main lines in that area.

Discovery of oil in the Joiner pool called for a six-inch line 1½ miles in length from the four-inch tapline serving Henderson, which is connected to the eight-inch main line from Longview to Palestine. As the demand for drilling gas drew, United Gas System officials ordered another lateral line built off this eight-inch main line, and 4½ miles of six-inch pipe were laid paralleling the Henderson line.

Kilgore was served by a four-inch lateral line off the eight-inch main line from Longview to Tyler, and discovery of oil in that area caused construction of 1½ miles of six-inch line to serve this new territory. As an additional reinforcement, seven miles of six-inch line are being laid from the end of the Kilgore lateral off the Longview-Tyler main line to connect with the eight-inch main line from Longview to Palestine, thus making a complete loop around the Kilgore area, increasing many-fold the capacity to supply natural gas for future development of this area.

The reserve supply of natural gas for drilling purposes throughout the Joiner-Kilgore-Longview area was reinforced further when operations began north of Longview. This area was provided with natural gas service for drilling by construction of 1½ miles of six-inch line off the 16-inch main line from Waskom to Dallas and Fort Worth.

Drilling contracts closed in the Joiner, Kilgore and/or Longview fields during the last 30 days were with the following operators: Burton Drilling Company, R. H. Dearing & Sons (two contracts), M. J. Delaney, Incorporated, Ernest Eslick & C. H. Brown, Lloyd Oil Corporation, M. H. Moss, Reiser & Pendleton, Incorporated, Frank Foster, Magnolia Petroleum Company (two contracts), Clifford Moers (four contracts), Petroleum Marketing Corporation, Ward Oil Corporation, H. L. Blackstock, W. B. Hamilton, K. & M. Oil Company, Merrin, Miller & Van Horn, Moody-Seagraves Production Company, Navarro Oil Company, Sultan Oil Company, Guy V. Lewis, L. O. McMillan, Iowa Park Producing & Refining Company, Merrick Drilling Company, Rice Drilling Company, F. B. Paine Drilling Company, National Securities Oil Company, Simms Oil Company F. H. E. Oil Company, Louisiana Texas Oil Corporation, Sinclair Texas Pipe Line Company, Humble Oil & Refining Company, and E. O. McWhorter (for settlement near Longview.)

East Central Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

Completions Indicate Size Of Joiner Producing Area

Tyler, Texas.—Westward and northwestern extensions given the Joiner field by a trio of wildcats indicate that the most prolific oil area is yet to be drilled, while the eventual linking up of the Joiner-Kilgore and Longview fields into one continuous zone of production has all the earmarks of materializing within a few weeks. The Joiner field is now conceded to be five miles in width, and about three miles in length at extreme points, as result of new developments during the past week.

A heavy producer in virgin territory and to the west of the Joiner field proper was scored unexpectedly shortly before noon March 23 when Demontrand and Ray's Birdwell 1, located near the Smith County line, blew in while the crew was winding up work on setting a liner in oil sand at 3598 to 3620 feet. The well flowed wild for a number of hours as no connections or control head were in place. The flow was rated above 500 barrels oil per hour, based on pit estimates. More than one mile to the west in Smith County there is a prospective producer in store for Guy Lewis et al's Cook 1, which forecasted the widening of the field past the above test.

McMillan-Rush et al's W. B. Thompson 1, located in southwest corner John Darley Survey and east of London, advanced production more than one mile to the north by coring saturated sand at 3660 feet. This test will result in a number of new locations being staked on nearby leases. Townsite of London is in line for a liberal share of development, as preliminary information on Ward Oil Corporation-J. R. Elliott and Johnston's Thrash 1, located north of the town, heralds a successful completion. The latter logged Pecan chalk at 2763 to 3168 feet. Pearl Oil Company's Eaton 1, located on a line between London and Overton, logged Pecan chalk at 2714 to 2739 feet, with a surface elevation of 450 feet, and early this week was drilling below 3400 feet. Successful completions from the above two tests will virtually cinch the linking together of the Joiner and Kilgore fields.

Leases East of Longview Are Proven Unproductive

Longview, Texas.—Elimination of a large volume of leases lying immediately east of the established oil zone in the Longview field by the completion of three dry holes was partially offset by the western portion of Gregg County offering excellent producing possibilities, while an extension of the field to the northwest in Upsher County appeared promising early this week. Pinching out of the Woodbine sand formation only a short distance to the east of production in this field, as evidenced by the logs of the dry holes, furnished a surprise upset for many operators with leases and royalties, and caused a spirited demand for protection acreage on the west flank of the established oil area, with buying extending beyond the west line of Gregg County at almost double the prices paid one week previous.

Extension of the Longview field into southeastern Upsher County became conceded at the start of the new week as result of Tips DeArmand-L. W. Capps et al's Chas. Cobb 1, Marshall Mann Survey, having cored oil saturated sand at 3771-81 feet, with a surface elevation of 428 feet. Presence of white sand in the recovered core has given rise to the belief that this outpost test may be near the water level, which is still an unknown quantity in each of the three producing areas of Gregg and Rusk Counties. Cobb 1 is located in the southwest part of the Cobb 417-acre farm, and about four miles northwest of nearest production. The hole was being conditioned early this week to make a drill stem test, then cement casing if the latter is favorable. A comparison of the key formations encountered by this wildcat is offered by the accompanying well table.

When three tests drilled into Georgetown lime below the expected oil zone on the east flank of the Longview field further progress on a number of tests lying equally as far over the dead line were halted, although most of the latter had not began actual drilling. W. C. Ray Drilling Company et al's Maude Smith-Fisher 1, located a short distance due east of Frank Foster-East Texas Refining Company's Rodden-Fisher 1, a producer on the south end of the field, logged Georgetown at 3546-55 feet, and missed the Woodbine. Similar results were obtained on K. E. Merren-Miller & Van Horn's Maude Smith 1, which passed from black shale into Georgetown at 3573, then abandoned at 3605 feet. O. L. Hickman et al's Maude Smith 1, located further to the east, proved dry at 3550 feet. All of these are in the west portion of the I. Skillern Survey, which at one time threatened to become a hot drilling spot, with the belief that Frank Foster et al's producer was a west edge well, while new developments have proven conclusively that it is on the east deadline for production.

Navarro Oil Company's B. G. Tenery (10-acre lease) 1, located east of the discovery well of the Longview field, logged Woodbine sand at 3587-3601 feet then went into red shale at 3601-03 feet, although slightly higher on structure than the pioneer well. Tenery 1 gauged 151 barrels on first hour through ¼-inch choke on 2½-inch tubing, and is rated at 7500 barrels daily. Magnolia Petroleum Company completed the first of six active tests on its B. E. Rodden 42 1/3-acre lease in the field proper, making 187 barrels per hour through one-inch choke on tubing from sand at 3597-3616 feet. The latter has been pinched to several hundred barrels daily, but will be opened up as soon as the company's trunk line system is put into service later this week. The oil from Rodden 1 tests 75 degrees in temperature, or about 55 degrees cooler than the discovery well, which is being allowed to produce about 4100 barrels daily.

Delayed by Fishing Job

Sultan Oil Company, Oklahoma City, has been delayed by a fishing job at 3514 feet on its S. F. Thrasher 1, located several miles northwest of the Longview field, and is checking about 65 feet lower than the discovery well on the chalk formations. Mrs. Mamie Hammond et al's Hamby 1, located northeast of the field, was coring shale below 3680 feet early this week. E. E. Eslick et al's Spring Hill Church lot 1, located between the above test and the field, has been deepened to 3623 feet and still in sand, according to reports. This test logged first sand at 3597 feet then encountered a gravel break in between the sand layers. Such a condition has also been reported from wells drilled in the vicinity of the discovery well. The Church Lot test is scheduled to be completed this week. Selby Oil & Gas Company's Snavely 1, Wm. Tynedale Survey, near Glade-

water provided the enthusiasm for a portion of the lease buying in the western portion of Gregg County through having logged first Pecan chalk at 2488 feet, with a surface elevation of 273 feet, and at last reports was drilling in chalk at 2880 feet. Because of its relative position in the basin it is due to encounter formations somewhat lower than tests drilled up near the shoreline.

Harry F. Elliott et al's S. G. Andrews 1, Wm. F. Hyde Survey, located northwest of Kilgore townsite and a probable connecting link between the Kilgore and Longview fields, corrected top of sand to 3636 feet, and has cemented casing at 3623 feet, with total depth 3650 feet. This wildcat is conceded to make a good producer. It is one of the many tests drilled in the district on a promotion plan. D. H. Byrd-Gulf Production Company et al's Frank Elder 1, which encountered no sand and went into Georgetown at about 3566 feet, is drilling below 3800 feet to fulfill 4000-foot contract, thereby validating leases that may prove productive on the west side of the block. In the far eastern part of Gregg County, S. F. Hurlburt-Burton et al's A. J. Page 1, Jas. F. Dixon Survey, encountered Georgetown at 3667-79 feet, and proved dry.

No control is held over the possible production trend from the Longview field as it now stands, except that Harrison County has probably been definitely excluded, thus deflating values on a number of highly touted drilling blocks. Routing of the production zone across the east tip of Upsher County is the most favorable course to pick, while it is anyone's guess as to where the deadline will appear on the north.

Drilling Activity Increases In Rusk-Gregg Counties Area

Tyler, Texas.—Drilling activity in Rusk and Gregg Counties has been substantially increased as the time approaches for the Texas Railroad Commission to make a definite stand as to the policy to be followed in regard to proration of development work and production in the district. The bulk of the new field work undertaken during the past week in both counties was natural development that follows extensions and usual expansion of activity, and there is no indication that the peak level in volume of development has been approached. The two counties started the current week off with a total of 357 operations, exclusive of completed wells, and this number included 194 active tests; 136 derricks and rigs; and 27 active locations.

Rusk County has hit its stride on field work, and total operations jumped from 225 to 280 during the past week. This county has 161 tests under way, as compared to only 33 in Gregg County. However, Gregg County is destined to come forward with a heavy quota of new tests as soon as more definite information is ascertained as to the producing area of the Longview field, which has been cut off sharply to the east by a group of dry holes and small producers.

Operations of some of the companies are reaching major proportions, as evidenced by the fact that Humble Oil & Re-

Rusk-Gregg County Producers—Kilgore Field

	Elev.	Pecan Chalk	Austin Chalk	Producing Horizon	Total Depth	Date Comp.	Initial Prod.	Daily Production 3-21-31
H. L. Blackstock et al's W. P. Brightwell 1	371	2600-3070	....-....	3672-3680	3685			Coring shale
Burton Drlg. Co.-Sabine Syn.d.'s E. B. S. Florey 1	354	2650-3070	3540-....	3710-3729	3729	3-15-31	10,000	Shut in
Geo. Thompson 1	437	2600-2986	....-....	3621-3660	3660			Drilling in
W. L. Brandon-McCamey et al's J. F. Richards 1	339	2541-2927	3428-....	....-3574	3574			Running casing
D. H. Byrd-Gulf Prod. Co. et al's Frank Elder 1	341	2418-2920	3374-3439	....-....	3750	(Top Georgetown 3566 ft)		Drlg.
Cordova Union Oil Corp. et al's C. O. Christian 1	442	2632-3057	3521-3600	3679-3705	3705	3- 4-31	10,000	*500
W. H. Dunning-C. P. Link-Markham's J. N. Peterson 1	...	2636-3109	3468-3590	3655-....	3655			Coring
Federated Oil Co.'s B. F. Laird 1	400	2607-3013	3480-....	3624-3654	3654	3- 1-31	10,000	Shut in
Humble O&R Co.'s L. D. Crim 1	403	2608-3014	3480-3552	3640-3652	3652	12-28-31	15,000	Shut in
L. D. Crim 2	487	2610-3090	3500-....	3699-3724	3724	2-27-31	12,000	
L. D. Crim 3	466	2615-3067	3545-....	3690-3720	3720	3- 5-31	12,000	
L. D. Crim 4	450	2650-3070	3497-3629	3672-3708	3708	3-11-31	12,000	
L. D. Crim 5	433	2682-3109	3496-....	3661-3690	3690	3-15-31	10,000	*21,180
L. D. Crim 9	457	2610-....	3495-3609	3685-....	3885			Coring
Ben Laird 1	403	2631-3062	3452-....	3605-3647	3647	3- 9-31	10,000	*500
J. N. Peterson 1-A	397	2632-3060	3475-3575	3616-3656	3656	3-10-31	15,000	*480
J. N. Peterson 2-A	...	2608-3045	3538-....	....-....	3660			Cem cas 3653 ft
Hunter-Rowe et al's J. R. Watson 1	...	2545-2972	3467-....	3598-....	3614			Drilling plug
Ed. M. Jones-Houston Oil Co.'s J. M. Crim 1-B	455	2606-3050	3550-....	3666-3693	3695	3-18-31	8,500	8290
W. R. Crim (10-ac) 1	440	2631-3060	3540-3601	3675-3695	3695	2-20-31	15,000	12,350
W. R. Crim (10-ac) 2	437	2610-3075	3555-....	3688-....	3688			Cem cas 3679 ft.
Karona Oil Co.'s J. N. Peterson 1	360	2544-2979	3478-....	3601-3616	3616	3- 1-31	10,000	*950
Luling Oil & Gas Co.'s Brightwell 1	356	2560-3053	....-....	3604-3630	3630	3-18-31	15,000	*425
Magnolia Pet. Co.'s Della Crim 1	434	2616-3098	3535-3596	3688-3712	3712	3- 7-31	15,000	*100
Della Crim 2	360	2580-3029	3424-....	3604-3617	3617	3-16-31	15,000	*100
Della Crim 4	381	2610-....	....-....	3640-3660	3660	3-20-31	20,000	*100
John W. Olvey-Sample's W. R. Crim (20-ac) 1	458	2645-3078	3558-3612	3688-3708	3708	2-21-31	15,000	*5225
H. R. Smith-Houston Oil Co.'s D. M. Peterson 1	446	2638-3036	3520-....	3660-3698	3698	2-25-31	10,000	*3615
Westheimer-Daube-Cox & Jake Hamon's D. M. Peterson 1	437	2652-2920	....-....	3638-....	3651			Coring sand

*Production pinched.

Gregg County Producers—Longview Field

	Elev.	Pecan Chalk	Austin Chalk	Producing Horizon	Total Depth	Date Comp.	Initial Prod.	Daily Production 3-21-31
Arkansas Fuel Oil Co.'s F. K. Lathrop 1-B	...	2578-2955	....-....	....-....	3597			Cem cas at 3570
R. S. McKinley 1	...	2446-2958	3535-3556	3578-3600	3600	3-12-31	15,000	*8700
Arkansas Fuel-Yount-Lee Oil Co.'s F. K. Lathrop 1-A	401	2458-2870	3528-3554	3569-3587	3587	1-26-31	12,000	*4050
Harry W. Elliott et al's S. G. Andrews 1	374	2565-3016	3472-....	3636-....	3650			Cem cas at 3623
E. E. Eslick-Little et al's Springhill Church 1	...	2441-2938	3547-3578	3597-....	3624			Cem cas at 3590
Frank Foster-East Texas Ref. Co.'s Jasper Rodden 1	333	2320-2882	3464-3494	....-3534	3542	3-13-31	3,000	*1650
Mrs. Mamie Hammond et al's J. M. Hamby 1	376	2507-3015	3600-....	....-....	3670			Coring shale
O. L. Hickman et al's Maude Smith 1	...	2300-2925	3476-....	....-....	3550	3-21-31		Dry
S. F. Hurlburt et al's A. J. Page 1	438	2440-3012	....-....	....-....	3679	3-21-31	3667 ft).	D&A (Top Georgetown
Magnolia Pet. Co.'s B. E. Rodden 1	...	2411-2955	....-....	3597-3616	3616	3-15-31	15,000	*170
K. E. Merren-Miller-Van Horn's Maude Smith (10-ac) 1	338	2373-2941	3415-....	....-....	3605	3-19-31	3573 ft).	D&A (Top Georgetown
Navarro Oil Co. et al's G. B. Tenery 1	419	2585-2981	3564-3581	3587-3601	3603	3-18-31	7,500	*355
W. C. Ray Drilling Co.'s Maude Smith 1	374	2339-2938	3458-3511	....-....	3555	3-21-31	3546 ft).	D&A (Top Georgetown
Roeser-Pendleton, Inc.-Foster-East Texas Ref. Co.'s B. E. Rodden 1	408	2405-2898	3531-3570	3575-3592	3592	3-12-31	15,000	*2945
Sultan Oil Co.'s S. F. Thrasher 1	328	2420-2910	3496-....	....-....	3514			Fishing junk
UPSHUR COUNTY								
Tips DeArmand Capps et al's Chas. Cobb 1	428	2591-3118	3738-....	3771-....	3781			Testing oil sand
McGinley Corp.'s Reeves-Merritt 1	358	2570-2930	3487-3523	....-....	4004	3-21-31	D&A.	

fining Company has 21 tests on the active list, exclusive of seven completed wells. Magnolia Petroleum Company is advancing to the front of the list with 13 operations in the two counties, with three successful completions. Yount-Lee Oil Company is expected to become a pace setter on field activity as result of having acquired a large block of leases in the heart of the field, and has made its first entrance into the district with four active tests as a starter.

Field Operation in New East Texas Area

Field operations in new East Texas area—compiled by The Oil Weekly as of March 23, 1931.

RUSK COUNTY OPERATIONS

Operator	Lcns.	Derricks & Rigs	Active Tests	Total
Geo. S. Anderson & Cox	.	1	2	3
W. D. "Andy" Anderson et al	.	1	1	2
C. Andrade—Imperator Oil Corporation	.	1	.	1
Armstrong & Pitts	.	1	.	1
Babcock-Gordon Oil Co.	1	.	1	2
Ball Oil Corp. & Malone	.	.	1	1
Nick Barbare (UOG&M CO)	1	.	1	2
Ed. W. Bateman et al	.	1	.	1
Bill & Dave Oil Corp.	.	.	1	1
Big Indian Oil & Dev. Co.	.	1	.	1
H. L. Blackstock et al	.	.	2	2
Harry W. Bleam et al	.	1	.	1
British-American Oil Co.	.	1	.	1
Dan Brooks, Trustee, et al	.	.	1	1
H. L. Brown—Hill et al	.	1	.	1
Burton Drlg. Co. (Sabine Syndicate)	.	.	1	1
Carolyn Oil Corporation	1	.	.	1
Roy I. Carter (C. P. Oil Company)	2	.	3	5
E. L. Chapman et al	.	.	1	1
Clark & Cowden	.	.	1	1
Cordova Union Oil Corp. et al	.	3	2	5
Crabtree-Rowe-Johnson	.	.	1	1
Cranfill-Reynolds Co.	.	1	3	4
J. G. Curtis & Lowe	.	.	1	1
Daniel & Tom C. Patten	.	.	1	1
Deep Rock-Wainwright-West Oils, Ltd.	.	.	1	1
Geo. DeMontrand-Geo. B. Ray	.	.	1	1
Devonian Oil Co.—Gulf Production Company	.	1	.	1
Dan Dillon et al	.	1	.	1
Dohman et al	.	.	1	1
W. H. Dunning—C. P. Link, Markham	.	1	2	3
East Texas Ref. Co.	.	.	1	1
Elzey Drl. Co. & C. H. Tautenhahn	.	1	1	2
Geo. Fagg et al	.	.	1	1
Federated Oil Co.	2	2	3	7
Fitzsimmons et al	1	.	.	1
Frank Foster—Deep Rock et al	2	1	3	6
Foster-Jefferies & Kolp	.	.	1	1
Foster-Little et al	.	.	2	2
Fox-Butler & Heflin	.	.	2	2
Gibson-Johnson & Merrick Drl. Company	.	.	1	1
R. W. Giles (Shreveport Production Co.)	.	1	.	1
A. M. Griffith et al	.	.	1	1
Gulf Production Co.	.	2	3	5
Gulf Prod. Co.-Devonian Oil Company	.	1	.	1
W. B. Hemilton-Consolidated Oil Company	.	1	4	5
L. P. "Pink" Hammond et al	.	1	.	1
Haynes Drilling Co.	.	.	2	2
Heep Oil Co.	.	.	1	1
Heep Oil Corp. & Imperator Oil Corporation	.	1	.	1
Hicks Drilling Co.	.	.	1	1
Hill & Jack Younger	.	1	.	1
Horseshoe Synd.	.	.	1	1
Humble Oil & Refg. Co.	3	5	13	21
Houston Oil Co.	.	2	2	4
H. L. Hunt et al	1	.	3	4
H. L. Hunt & Graddy H. Vaughn	1	.	1	2
A. R. Irwin et al	.	.	1	1
Johnson et al	.	.	1	1
C. M. Joiner (E. R. Tennant, Rec.)	.	.	4	4
Ed. M. Jones-Houston Oil Co.	.	2	2	4
Jones Drl. Co.	.	.	1	1
K. & M. Oil Co.	.	2	1	3
Karona Oil Co. (Heard)	.	2	1	3
J. S. Kimbrough et al	.	1	.	1
LaSalle & Davenport	.	1	.	1
Killum & Reed	.	1	.	1
Laster Oil Co.	.	.	1	1
Laster Oil Co. & Deep Rock	.	.	2	2
Laster Oil Co. & Miller	.	1	.	1
Louisiana-Texas Oil Corp. & Lyons	.	.	1	1
Leonard Petroleum Co.	.	.	2	2
Lewis Prod. Co.	.	.	1	1
Lide—Taylor Oil Co.	.	.	1	1
Lide-Kowe Oil Co.	.	.	1	1
Lively & Bryan	.	.	1	1
Pete Lively et al	.	.	1	1
Luling Oil & Gas Co.	.	1	.	1
John E. Mabee, Inc.	.	.	2	2
Madden et al	.	1	.	1
Magnolia Pet. Co.	.	3	4	8
Marine Corp. et al	.	1	1	2
Chas. McDonald-Merrick Drlg. Company	.	.	1	1
C. L. McMahon et al	.	2	.	2
McIntyre Drilling Co.	.	.	1	1
McMillan et al	.	1	1	2
Merrick Drilling Co. et al	.	.	1	1
Mid-Kansas Oil & Gas Co.	.	.	1	1
Morefield Drilling Co.	.	1	.	1
H. S. Moss & Pete Urschel	.	.	1	1
Moss et al	.	.	1	1
Navarro Oil Co.	.	.	1	1
Oliver & Brown	.	1	.	1
Olson Bros. et al	.	.	3	3
John W. Olvey & Sample	.	.	1	1
Pearl Oil Co. (Vitek)	.	1	1	2
Peery et al	.	1	2	3
Petroleum Marketing Corp.	.	1	2	3
A. W. Phillips-Trico Oil Co.	1	3	.	4
W. B. Pierce et al	.	.	1	1
Pilot Oil Co. (Tom E. Cranfill)	.	1	1	2
Pioneer Oil Co. (Moody-Seagraves)	.	5	4	9
Jim Pollard et al	1	.	.	1
C. W. Porter et al	.	1	.	1
Republic Prod. Co.-Louis Hart	.	1	.	1
Robert Oil Corp. et al	.	.	1	1
Robertson Drilling Co.	.	.	1	1
J. S. Rushing et al	.	1	.	1
Rusk County Oil Co.	.	1	.	1
Nat. Sadler et al	.	.	1	1
Shasta Oil Co.	.	.	1	1
T. G. Shaw Interests	.	1	.	1
Bert J. Shaw Oil Co. et al	.	.	2	2
Shell Pet. Corp.	1	.	.	1
Shubert et al	.	1	.	1
Sinclair O&G Co.	.	.	5	5
H. R. Smith—Gulf Prod Co.	.	1	1	2
Snetcher & Pittman	.	.	1	1
Stanolind Oil & Gas Co.	.	2	2	4
H. R. Smith—Houston Oil Company	.	.	2	2
Stokes et al	.	1	.	1
Snowden & McSweeney Co.	.	1	1	2
Sun Oil Co.	.	2	.	2
Texas Inland O&G Co. (G. W. Basom)	.	.	1	1
Tidal Oil Co.	.	2	1	3
Tidal Oil Co.—Wm. Johnson	.	.	1	1
Texas Unity Oil Co.	3	.	.	3
Turman Oil Co.	.	3	2	5
C. E. Upchurch et al	.	.	2	2
W. D. Walton et al	.	1	.	1
Ward Oil Corp.	.	2	1	3
Ward Oil Corp.—Elliott-Johnson	.	.	2	2
Weaver-Crim Corp.	.	1	.	1
Westexas Oil & Roy Corp.	.	1	1	2
Westheimer-Daube-Cox & Hammon	1	1	1	3
Williams & W. H. Dunning	.	1	.	1
Witherspoon Oil Co.	.	.	1	1
Woodley Petroleum Co.	.	3	2	5
Total	23	96	161	280
Total previous week	19	95	111	225

GREGG COUNTY OPERATIONS

Operator	Lcns.	Derricks & Rigs	Active Tests	Total
Alco Oil Corporation	.	1	.	1
Jule Alford et al	.	1	.	1
Arkansas Fuel Oil Co.	.	3	1	4
Arkansas-Yount-Lee Oil Co.	.	1	2	3
Barkley & Lincoln	.	1	.	1
Claude Bell & R. A. Graddy, Inc.	.	.	1	1
W. L. Brandon-McCamey et al	.	.	1	1
D. H. Byrd-Gulf-Humble et al	.	1	1	2
Cranfill-Reynolds Co.	.	2	.	2
Daisy Oil & Gas Co.	.	1	.	1
Davis & Russell	.	1	.	1
Daniel & Tom C. Patten	.	1	1	2
Joe DeGlazier et al	.	1	.	1
Harry W. Elliott et al	.	.	1	1
E. E. Eslick & Little	.	.	2	2
Frank Foster—East Texas Refining Co.	.	1	.	1
Frank Foster & Rhodes	.	1	.	1
Mamie Hammonds—Clark et al	.	.	1	1
Heep Oil Corp.	.	1	.	1
O. L. Hickman et al	.	.	1	1
Ed. B. Hopkins & A. R. Byrd, Jr.	.	.	1	1
W. D. Humphrey et al	.	1	.	1
S. F. Hurlburt et al	.	.	2	2
Kilgore Central Oil Co.	.	1	.	1
Lacey et al	.	.	1	1
Leonard Petroleum Co. (now Tom Davis et al)	.	1	.	1
Lide-Hunter-Rowe	.	.	1	1
Magnolia Petroleum Co.	1	2	2	5
K. E. Merren-Miller-Van Horn	.	.	1	1
Navarro Oil Co.	.	.	.	.
John W. Olvey et al	.	1	.	1
Phares & Sample	.	1	.	1
Fred D. Prince et al	.	1	.	1
Primrose Ref. Co.-Penn.-Worth Oil Prod. Co.	.	1	.	1
Pilot Oil Co.	.	1	.	1
W. C. Ray Drilling Co.	.	.	1	1
Republic Prod. Co.	.	1	.	1
C. Rosenfield (Rose Oil Corp)	.	.	1	1
Roeser-Pendleton, Inc. et al	.	1	.	1
Robert et al	.	1	.	1
Jim Rush-Simms-Hubbard	.	.	1	1
Selby Oil & Gas Co.	.	.	1	1
Shell Petroleum Corp.	.	.	1	1
R. C. Showalter et al	1	.	.	1
Skipper Oil Co.	.	.	2	2
Smith et al	.	1	.	1
Stanolind O&G Co.-Simms Oil Co.	.	1	1	2
Sultan Oil Company	.	.	1	1
Tidal Oil Company	.	.	1	1
Tidal-Jim Evans & J. K. Wadley	.	.	1	1
J. R. Travis (was Holloway-Hardin)	.	.	1	1
Paul Vitek et al	.	1	.	1
W. L. Wallett et al	1	.	.	1
J. A. Weir et al	.	1	.	1
J. Z. Werby & McMinn et al	.	.	1	1
Winona Oil Co. et al	.	1	.	1
Wise & Jackson	1	.	.	1
Ben Youngblood et al	.	1	.	1
Yount-Lee Oil Co.	.	4	.	4
Total	4	40	33	77
Total previous week	2	33	25	60
Total both counties	27	136	194	357
Total previous week both counties	21	128	136	285

Joiner Field Contributes 10 Of 18 Rusk-Gregg Completions

Tyler, Texas.—Joiner field contributed 10 of the 18 completed oil wells in the Rusk-Gregg district during the past week, and six additional producers were scored by the Kilgore field, while the Longview area came through with a pair of big producers. These new completions have not materially boosted the output of the district because of congestion in tank car shipments in the Joiner and Kilgore fields along with delay in completing new facilities, while the latter accounts for the Longview field doing only 17,880 barrels from six wells, all pinched, at the close of the week. The district produced 108,000 barrels during the 24-hour period ending 7 a. m. March 21.

Two companies are accounting for the bulk of the crude production and tank car shipments originating in the Kilgore field. Humble Oil & Refining Company is shipping from 21,000 to 23,000 barrels daily by cars, while Houston Oil Company is moving about 24,000 barrels daily from its jointly-owned properties with H. R. Smith and also Ed. M. Jones. John W. Olvey et al began operating their line to a rack on I.&G.N. Ry. near Longview during the past week and were handling 5225 barrels daily at last reports from one well.

In the Longview field, East Texas Refining Company is giving pipe line and market relief on a limited basis to three wells through its four-inch line that extends to a 41-car rack on Santa Fe Railroad at Longview. A six-inch line is to be laid parallel to this four-inch carrier from the rack to a point in the Skiller Survey, where a "Y" is made in tapping the main field and the producer on the south end.

Joiner field is credited with having averaged 40,600 barrels daily during the week ending 7 a. m. March 18, or about 5000 barrels less than the daily average during the week previous. This decline is due to inability to move the oil out in tank cars, with few exceptions, rather than failure of the wells to maintain their output. However, the number of non-flowing wells in the Joiner field is rapidly increasing.

Widening of the Joiner field across the county line into Smith County to establish a record width for the trio of fields took place early last week when Guy Lewis et al's Cook 1 encountered cap rock at 3674-75 feet followed by oil saturated sand to 3676 feet. This test is located in the southeast corner of 82-acre lease, Jas. Jordan Survey, and east of Arp. Pecan chalk was logged at 2736-3103 feet, and Austin chalk at 3525-3610 feet. Drilling was suspended to cement a string of casing on top of the cap rock. J. B. Bunte et al's Jarvis 1, Juan Vargas Survey, has rigged up to drill about four miles to the south of the above Smith County test.

Geo. DeMontrand and Geo. B. Ray et al's J. A. Birdwell 1 is located 1095 feet from the north and 150 feet from the east line of 73-acre tract, M. J. Prue Survey. Casing was cemented at 3585 feet.

First Kilgore Gas Lift Is Experimental Plant

Tyler, Texas. — Introduction of air-lift equipment to stimulate production from small wells in the Joiner field has been authorized by the Sinclair Oil & Gas Company, and may be followed by other nearby lease owners. A compressor station is being erected by Sinclair Oil & Gas Company on its W. W. Holland 50-acre lease, which has four completed wells averaging about 4300 barrels daily, and five additional tests drilling on the same tract. Only a small air-lift unit is being used by the company until it is definitely established that the wells are adaptable to such artificial means of lifting the oil to the surface.

▼ NEW MEXICO - ROCKY MOUNTAIN AREA ▼

Two Deep Rotary Tests Planned For Greasewood Dome Structure

Denver, Colo.—The new Aztec Corporation, which is being organized here by Miller Robert Taylor, is to drill two deep rotary tests on the Greasewood dome structure, in Weld County, Northeastern Colorado. Although it is understood that the locations are spotted, no official announcement concerning them is made. It is understood that bids from various Oklahoma drilling contractors are being studied by the Aztec officials.

Noble Drilling Company and Olson Drilling Company are among those offering figures. Both tests are to be drilled to the Muddy sand around 6600 feet with rotary, and then will be changed to cable tools to be carried down to 7500 feet if necessary. This should test the entire Dakota series.

These tests should prove more about this newly discovered field than has hitherto been known since the discovery well was brought in last fall. This well is producing from an unidentified sand, presumably the shale above the Muddy, at 6647 feet; its production has held up surprisingly well, the daily average being from 325 to 350 barrels of high grade crude. Test is owned and was drilled by Platte Valley Petroleum Company which, in order to meet its lease requirements, will have to drill several wells this summer.

Bill Would Give Wyoming Part of Elk Basin Field

Cheyenne, Wyo.—One of the new laws passed by the last congress is particularly interesting to Wyoming: it is Senate File No. 3771, introduced by Senator Sullivan, which authorizes the Secretary of the Interior to convey the E½ NE of Section 36-58-100, in the Elk Basin field, to the State of Wyoming. Bill was introduced at the request of Carl M. Cox, state land commissioner, who explained that the state had for many years supposed that this 80-acre tract belonged to it. Wyoming has been receiving royalties and rental on the same to the amount of more than $13,000, being leased and operated by Ohio Oil Company. It then became known that when the Elk Basin structure was withdrawn by the federal government that Section 36 in question had not been transferred.

Helena, Mont.—The Montana legislature has passed House Bill No. 377, which provides for a $500 penalty for the failure to comply with lease provisions in releasing oil or gas leases which owners have given on lands and on which agreements have not been met. The bill provides that "the owner of the leased premises may sue in any court of competent jurisdiction to obtain such release, and he may also recover in such action the sum of $500 damages, and all costs, together with a reasonable attorney's fee for preparing and prosecuting suit, and he may also recover any additional damages that the evidence in the case will warrant. If, in such action, the plaintiff fails to establish the forfeiture of the lease, an attorney's fee must be allowed to the holder of the lease."

North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

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Deep Production Search Likely for North Texas

Wichita Falls, Texas.—Campaign for deep production in the old shallow oil areas of Wichita, Archer and north Young Counties received fresh momentum late last week when Deep Oil Development Company's L. F. Wilson 1 established a new oil horizon for Archer County in the Canyon lime formation at 2208-10 feet rated at 450 barrels of 41 gravity oil daily. This discovery gives the company two potential deep oil producers from the first three deep tests undertaken on a community basis, with numerous independent operators and business men of the district subscribing to the stock offered to defray the cost of uncovering new oil horizons in the district. Deepening of oil wells in Archer County is quite certain to follow on a large scale as result of this strike.

Deep Oil Development company's L. F. Wilson 1 is located in the southwest corner of Section 76, A.T.N.C.L. Survey. The Canyon was tapped with big bit, with considerable open hole, and plans are to set 8¼-inch liner with screen to shut off troublesome cavings to make a thorough test for production. The well has a surface elevation of 971 feet, and made a head of oil estimated at 175 barrels on the afternoon of March 22 after having bailed from big hole at rate of 15 barrels hourly. A commercial producer is assured.

The first two attempts for deep production were launched in Wichita County last year, and a small producer is expected to follow the shooting of the company's Munger 1, which is standardizing after plugging back from flowing water horizon in the Ellenberger lime at 5400-30 feet to 3977 feet. This well passed up production rated at 300 barrels daily in lime at 3675-3942 feet, testing 44 gravity, and a good producer is expected to follow when given a heavy shot. The original contracted depth of 6000 feet was cancelled by agreement of acreage contributors. The heavy rotary equipment on Munger 1 has been moved to Hirschi 1, located in the north end of the county, as the latter has failed to make reasonable progress with cable tools, which were installed at 3800 feet and used to the present depth of 4368 feet.

Based on the encouraging production showing made by Deep Oil Development Company's Munger 1, the K-M-A field in southern Wichita County and northern Archer County is to receive a half dozen tests in the above deep horizon, involving a wide area at the same time. Consolidated Oil Company's Munger 1, located in Block 31 and about 1¼ miles southeast of the deep well, is drilled below 500 feet on a 4000-foot contract. Wayne Hammon et al's Bradley 3, which was abandoned at 1860 feet last August, is cleaning out to try for production under the S. Holloway Survey, Abstract 497, and Jack H. Martin et al have assembled about 22 acres in leases, including a few town lots in the Kemp City townsite, Block 35, to drill a 4000-foot contracted hole. Staley-Wynne et al recently obtained lease on about 160 acres in Block 23, Kemp's Wichita Valley Farm Lands Survey, to drill a 4000-foot test on a 50-50 basis with land owners. Shappell Oil Company is rigging up heavy rotary to drill a 4000-foot test on the north 240-acre lease of Section 2, H.&G.N. Ry. Survey, Abstract 1179, Archer County. The latter is known as W. P. Ferguson 2.

In eastern Young County, Panhandle Refining Company's Steele 1 has been completed from sand at 2362-94 feet rated at 15 barrels oil and 12,000,000 cubic feet of gas daily, thus giving the pool two producers. The above company opened the area for production late last year by drilling Mary Cox 1, Indianola Ry. Survey, Abstract 156, Section 1, with an initial flow of 10 barrels oil per hour and 15,500,000 cubic feet gas daily at 2329-36 feet. Cox 1 has been deepened on several occasions, and recently was shot with 50 quarts at 2329-52 feet, resulting in a new output of 180 barrels oil and 6,500,000 cubic feet of gas daily. A ready market is available for the gas, and arrangements are being made to obtain a pipe line connection for the oil.

Brazos River Gas Company et al's Clayton 1, which was reported last week as having established a new oil area for western Jack County, has been completed making 250 barrels oil and 3,250,000 cubic feet of gas, testing 980 pounds rock pressure, from Strawn sand at 2894-2942 feet, with a total depth of 2945 feet. Gulf Production Company farmed this lease out for gas development, and is carried for 1/16 overriding royalty. The well owner is planning to lay a line to connect with The Texas Pipe Line Company's system.

"Bee Line Geology" Proves Successful in Gray County

Amarillo, Texas.—Practicing "bee line geology" after regularly spotted locations failed to yield the desired results, Magnolia Petroleum Company scored a heavy producer in the Sullivan field, western Gray County, when its W. B. Latham 4 blew in on the afternoon of March 19 from crevice in granite wash formation at 2923 feet making 3396 barrels of oil during first 18 hours. Two previous tests drilled on the 100-acre lease, which is located directly between the two heavy producers of the field, were somewhat disappointing, so Latham 4 was ordered drilled on a direct line between the two. The idea was suggested by A. G. Post, district superintendent of the company with headquarters at Pampa, and met the approval of officials of the general office at Dallas.

Latham 4 blew in while the crew was engaged in reaming the hole to lower 8¼-inch casing from 2345 feet to the bottom of the hole because of about 10,000,000 cubic feet of dry gas coming from lime at 2670-2923 feet. No oil was in evidence when the reaming job began, and the well began flowing at rate of 110 barrels of 41 gravity oil per hour, with about 25,000,000 cubic feet of gas, yielding 1.3 gallons per 1000 cubic feet. This flow of gas doubled in volume, and the output of oil increased to 232 barrels per hour at the end of the first 18 hours. Latham 4 is located on a line between Skelly Oil Company's Heitholt 1, which earned a potential of 5952 barrels daily middle January from granite wash at 2995-3000 feet, and J. T. Harrell et al's (was Taconian Oil Company) Robt. Sullivan 1, discovery well of the field. The latter came in middle last September making 10,000 barrels at 2998 feet, and on last proration schedule was rated at 5000 barrels potential, with an allowable production of 1255 barrels daily. Skelly Oil Company's Heitholt 1 is officially credited with the same potential and allowable quota.

South Texas Field Developments

EARL POST, *Staff Correspondent, San Antonio, Texas*

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Salt Flat Prorated Output 70 Per Cent of Potential

San Antonio, Texas.—Salt Flat field, just north of Luling townsite, Caldwell County, went on a new six months' proration schedule March 14, allowing the field a daily production of 12,765 barrels. This is 70 per cent of the potential production of 18,223 barrels based on a 24-hour gauge of the 330 producing wells in the field. The new schedule will be in effect until September 14.

Following are the potential and allowable totals by leases as announced by Umpire H. H. Fitzpatrick:

Company—	No. wells	Potential Prod by barrels	Allowable Prod. by barrels
Abercrombie and Harrison	5	138	97
Adams and Lyles	2	81	57
Carl Brothers	3	391	274
Cook Finance Company	1	5	4
Cranfill & Reynolds	4	124	88
Eastland Oil Company	1	88	62
Forrest Oil Company	2	87	61
Golden West Oil Company	7	243	170
Gulf Production Company	61	2,840	1,989
Humble Oil & Refining Company	172	11,120	7,789
Nash, Windfohr & Perry	15	698	488
Shell Petroleum Corporation	35	1,666	1,166
Sun Oil Company	4	180	126
The Texas Company	9	254	178
M. K. Townes	5	139	97
Witherspoon Oil Company	2	17	12
Turman & Brown	2	152	107
	330	18,223	12,765

Extend Duval County Area Quarter-Mile to Southeast

San Antonio, Texas. — Duval Oil Company (Frasher & Schoolfield) scored a one-fourth mile southeast extension to the S. & O. field, Duval County, when it completed Bishop Cattle Company 2 for an initial flow of 1550 barrels from 2407-12 feet. It is 990 feet east and 1338 feet south of Bishop Cattle Company 1, the discovery well.

The well topped a sand at 2367 feet, which showed about the same level as Number 1, slight amount of oil in the core. The 6⅝-inch casing was then set at 2318 feet and the well drilled to its present total depth of 2412 feet. From 2318 feet to 2407 feet, there was an alternate sand and shale formation, dry practically the entire distance. From this point to the total depth, the saturated core was obtained.

The well made 800 barrels into the pits the first 12 hours, but was cut down to about 650 barrels daily when placed on the line. This was accounted for by the back pressure created by the flowing of the oil through a 1600-foot, two-inch line from the well to the tanks. The oil is of pure pipe line quality and is showing no water.

The exact location is 330 feet north and east of the center of Section 135.

What looks to be the second producer in the SRC pool of Duval County is in process of completion. It is S. R. & C. Oil Company and Vacuum Oil Company's Duval County Land Company 4, Section 293, 300 feet west of the same company's Number 1, discovery well. The well topped the sand at 1714 feet, three feet higher than the first well, a 500-barrel producer initially, and casing has been set just above this depth. It is to be completed within a couple of days. The test is the fifth to be drilled in the pool and to date, there is only one producer, that being the discovery test.

San Antonio, Texas.—Carsill Oil & Gas Company's McGill 1, Jim Wells County, is making preparations to drill in after setting casing at 2682 feet. This well recently showed 600 pounds pressure in one minute with a slight odor of petroleum in a sand cored at 2685-89 feet, just below a lime cap encountered at 2681-83 feet. The exact location is 1665 feet from the west line and 654 feet from the south line of the William D. Baldwin Survey, three miles north of the town of Armagosa. It is 12 miles southwest of Larcro Gas & Petroleum Company's Wade 1, a 30,000,000-foot gas well.

Gauging at Refugio Shows Actual Production Decline

San Antonio, Texas.—Actual gauging of the wells of the deep horizon of the Refugio field show their production to have dropped from an average of 303 barrels per well a day to 239 barrels per well after installing uniform one-quarter inch chokes. The gas waste is reported to have been cut only a small amount through this method.

It is likely that operators will be allowed to go back to their former method of producing, if the several proposed casing head gasoline plants are constructed. The first of two such plants is reported to be planned by a syndicate from Tulsa, Oklahoma, to be started before the close of March. A carbon black plant is to be constructed if the permit is granted.

These outlets for the waste gas, estimated at 200,000,000 cubic feet daily before the uniform small chokes were installed, will solve the problems of operators in the district.

During the week, several completions were reported in the field. Dash Production Company's W. Upton 1 on Block 86, is a 450-barrel producer at 6459 feet. Eddie M. Jones' J. Mitchell is making 40 barrels of gasoline from a total depth of 6468 feet, while Saxet Oil Company has a small producer in Wilson Heard 4-A at 3685 feet. Moody-Seagraves Producing Company's St. Johns 1-B (T. P. Morgan) has finally been completed for about 75 barrels from 5478 feet. This well, south of the townsite, was drilled deeper, showed salt water and was then plugged back to the present producing horizon. The same operator's O'Conner, after testing salt water in several horizons, has been abandoned at 6474 feet.

The following figures show the daily production of the Re-

fugio field during the week ending March 4, prior to placing the wells of the deep sands on the small chokes and the same wells the week of March 18 after they had been on the small chokes for eight days. There were 59 wells the first week, but one was killed as a result of two small a choke and is not included in the second total. The completions made in the meantime are not shown in the second row of figures.

Company—	No. of wells	Production week ending March 4	Production week ending March 18
Houston Oil Company	8	1,266	971
Edwin M. Jones	2	320	*253
Luling Oil & Gas Company	3	1,071	914
Mission Drilling Company	3	1,141	705
Moody-Seagraves Producing Co.	16	6,304	5,627
Pearson Properties, Inc.	4	926	356
Phillips Petroleum Company	3	720	579
Saxet Oil Company	3	1,062	279
L. L. Smith, Inc.	2	779	612
The Texas Company	1	182	150
United Production Company	14	4,121	3,825
Total	59	17,892	14,041

*One of wells dead, result of too small choke.

Extensions in Pettus Area Revive Interest in Field

San Antonio, Texas.—Recent discoveries and extensions in the immediate Pettus area, Bee County, has brought about another flurry of activity. During the past week alone, several new wells were spudded in the virtual proven territory, while two more were added in the wildcat districts.

The largest completion of the year in the Petus pool was recorded when United Production Company's Ray 31 came in for 425 barrels initial on a one-half inch choke from 3962-75 feet. The well made 360 barrels the first 21 hours and showed 260 pounds working pressure. The 6⅝-inch casing is set on top of the caprock at 3961-62 feet.

The Ray 31 is located midway between the discovery pool and the townsite pool, 2050 feet from the east line and 2200 feet from the south line of the George A. Kerr survey. This well is the first to be drilled between these two pools, which are 3500 feet apart, and its successful completion assures their connection.

About 700 feet southwest of Ray 31, United Production Company is rigging up to spud its Ray 33. In the area just east of the discovery pool where several extensions were recently made, two more Ray wells have been spudded. They are the Ray 35, 1100 feet east of Ray 34, and the Ray 36, northeast of the Ray 34.

The two wildcats to be spudded are Alexander et al's McFall 1, three miles south of Skidmore, and Catlett & O'Neill's Miller 1 in the Ronald Hoskiss Survey, eight miles west of Beeville.

J. S. Mauldin's Mauldin 1, just south and slightly west of the Pettus townsite, is holding much interest at this time. This well is down to 3682 feet and is waiting on casing. It recently showed 125 pounds pressure and some gasoline and mud on a drill sem test of a sand at 3847-54 feet. It was drilled a bit deeper before shutting down for casing. Should this well be a successful completion, it will bring about a considerable play between the Cosden pool and the Townsite pools at Pettus, 1½ miles apart. Three dry holes have been drilled in the immediate vicinity of the Mauldin test.

Southern Portion of Darst Field Now in Proven Area

San Antonio, Texas.—Several more leases have been placed in the proven area of the southern portion of the Darst Creek field, Guadalupe County, by completion of Sun Oil Company's Dowdy 1 as a small pumper in the Edwards lime. The well, now being placed on pump, is estimated as good for between 50 and 75 barrels with only a slight bit of water.

The test is one-quarter mile due south of The Texas Company's Dowdy 1-A, a 225-barrel well. Its exact location is 150 feet from the north line and 1200 feet from the east line of the 111-acre A. E. Dowdy tract in the Jacob Darst Survey.

The Dowdy 1 topped the Edwards lime at 2587 feet and was drilled to 2593 feet. The 6⅝-inch casing was set at 2570 feet. The well topped the chalk at 2208 feet and went out of the formation at 2389 feet.

This test is expected to bring about the immediate drilling of several more wells by the Empire Gas & Fuel Company, The Texas Company and Sun Oil Company, which have the controlling acreage in the vicinity. Humble Oil & Refining Company, while not on the line between the present producing area and the new producer, has some acreage which likely will prove productive.

The field's new proration schedule, which went into effect March 14, continues until April 1, announced H. H. Fitzpatrick, proration umpire. This new schedule allows 20,000 barrels daily production instead of 30,000 barrels as the former schedule. It is based on the eight-hour gauges of 258 producers, which show a combined potential of 152,652 barrels. The new schedule by companies follows:

Company—	No. wells	Potential Prod. in barrels	Allowable Prod. in barrels
Abercrombie & Harrison	5	4,021	500
Cranfill & Reynolds	1	97	97
Empire Gas & Fuel Company	8	2,407	300
Gulf Production Company	52	34,996	4,420
Humble Oil & Refining Company	49	28,150	3,530
Louisiana Oil Refining Corporation	17	11,453	1,498
Magnolia Petroleum Company	46	14,853	2,038
Penn Oil Company	1	45	45
Stroube & Stroube	1	95	95
Sun Oil Company	13	15,621	1,944
The Texas Company	55	39,940	4,980
Dr. F. L. Thomson	1	75	75
L. C. Turman	2	25	25
Trinity Drillers	3	840	150
H. H. Weinert et al	1	90	90
H. H. Weinert 15 acre	1	55	55
H. H. Weinert	1	55	55
Max Starcke Receiver	1	829	103
	258	153,652	20,000

There was one completion in the proven area of the field during the past week, Humble Oil & Refining Company's L. G. Denman 23-A, which is making around 800 barrels on pump from a total depth of 2548 feet. It topped the Edwards about 2523 feet.

San Antonio, Texas.—The Slick Estate's third test in the new Slick pool, northern Goliad County, has been spudded. It is 1830 feet southwest of the Poetter 1, discovery well, and is 330 feet from the northeast line and 990 feet from the southeast line of the tract in the W. C. Brown Survey. Two wells have been completed in the field, the Poetter 1, which made 500 barrels initially and the Allen 1, which has just been completed as a 40,000,000-cubic-foot gasser spraying about 60 barrels of gasoline. Both wells are owned by Slick Estate.

Gulf Coast Field Developments

JACK LOGAN, *Staff Representative, Houston, Texas*

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Locations Made for Three Tests in South Louisiana

Houston.—Three new locations marked the extent of new operations to be undertaken in the Louisiana Gulf Coast area during the past week. Putnam Syndicate has made location in West Feliciana Parish for its Como Plantation 2, Section 51-1s-4w. Como Plantation 1 of the same company was abandoned the first week of February, this year, at total depth of 3738 feet. A slight show of oil was noticed while the well was being tested at this depth but considerable trouble was experienced in trying to pull a stuck drill stem and the test was sidetracked at 670 feet.

Tests made of the sands at 670 feet and 1100 feet showed unfavorably, and it was decided to abandon the well and drill a second test. The Texas Company has made location for its State Calcasieu Lake 8 in the East Hackberry field of Cameron Parish. Several locations have been made in this field during the past three months but operations have been at a standstill. One other location was made in Cameron Parish for the week, Federal Petroleum Company's C. Hebert Estate in the southeast part of the Old Hackberry field, 660 feet south and 660 feet west of the northeast corner of the northwest quarter of the northwest quarter of Section 33-12s-10w.

Barbers Hill has Numerous Wells Nearing Completion

Houston.—An unusual amount of interesting activity which is in progress with favorable shows in evidence in six wells, points to an appreciable increase in potential production at Barbers Hill field and an added amount of operations for the future. Yount-Lee Oil Company completed its Chambers County 16, a work-over, located on the southeast flank of the dome the past week for initial production of 330 barrels of 30 gravity oil from total depth of 5293 feet. Five joints of screen were set in the hole. The well is flowing through 1¼-inch choke, pressure registering 460 pounds.

Humphreys Corporation's Wilburn 2, on the the southeast side of the dome has set and cemented seven inch casing at 4982 feet and will probably be completed during the week. Top of the salt in this well was encountered at 1715 feet. Mills Bennett Production Company has set packer in its Barber 1-B and will test an oil sand encountered at 5320 feet. This well is located on the north flank of the dome, near Barber 3, the discovery well of that flank. Anne Higgins 5 of the same company has also set packer at 5270 feet will probably be brought in as a producer within the next few days.

Another test that indicates favorable results is Smith 1 of Sun Oil Company. Casing has been set in this well at 5120 feet. It is located about half-way between the two producing groups on the west side of the field and if brought in as a producer will prove practically all of the area in the W. D. Smith Survey. The Texas Company is attempting to round out productive limits on the southwest flank of the field in its Williams 1. A full string of four and three-fourths inch liner with 74 feet of screen has been set on the bottom of the hole at 6965 feet and the well is being washed at 6787 feet. A good oil show was drilled through at the 6700-foot level last December but due to several fishing jobs the work of completing the well has been held up for about two months. Winfree 3 of The Texas Company, located on the west side of the dome, is drilling in lime at 4309 feet. A showing of oil was noticed in the sand at 3664 feet.

Young-Lee Oil Company's O. K. Winfree 1 on the west side of the field in the Smith Survey tried to come in at 5495 feet and had to be mudded up in order to run two and one-half inch tubing after seven joints of screen had been set. Woodward 10 of Yount-Lee Oil Company will likely be completed within the next few days. This test, located on the southeast side of the field in the William Hodges Survey is coring an oil sand at 5485 feet. Chambers County 18 of the same company drilled into an oil sand at 4465 feet and has set three joints of five-inch screen. Preparations are being made to run tubing in the well. This week denotes the greatest amount of interesting activity for any one week in the field since the latter part of 1930, and seems to serve as an indication of the confidence of operators in completely outlining the field in the near future.

St. Martin Parish Wildcat Is Abandoned at 6696 Feet

Houston.—The wildcat test of Harrison & Abercrombie, Barras 1-A, located on the St. Martinsville prospect in Section 66-11s-6e, St. Martin Parish, Louisiana Gulf Coast, was abandoned last week in sand at 6696 feet. A slight oil show was encountered in the sand from 3297 feet to 3304 feet. This is the only test being drilled in the vicinity of St. Martinsville dome.

Active operations in St. Martin Parish include the two tests of Humble Oil & Refining Company in Bayou Bouillon. Woodward 1, located in Section 13-9s-8e, 2957 feet north and 3878 feet west of the southeast corner of the section, has recently completed its sixth sidetracking job and is now drilling in shale at 5760 feet. Humble Oil & Refining Company's State 4 is down 4570 feet in sand. These two wells were originally operated by Rycade Oil Corporation but have been taken over by Humble Oil & Refining Company.

The Texas Company Ready To Make Test At Manvel

Houston.—The Texas Company was preparing at the middle of this week to drill plug in its O. F. Ewing 1, wildcat on the Manvel prospect, Brazoria County, 1½ miles north of the town of Manvel and 15 miles south of Houston.

Casing has been set and cemented in the test at total depth of 7590 feet. The first show encountered in the drilling of the well was found at 5520 feet when a drill stem test showed salt water and small amount of gas.

This prospect was found in 1929 by torsion balance, the

picture indicating existence of a probable salt dome; but no salt or cap rock has been struck during the drilling of this test.

Other operations in Brazoria County indicate a prospective completion during the coming week with the finding of a good show of oil in Layne et al's Wisdom 7-A at Damon Mound. Top of the oil sand was hit at 3648 and the well is now reaming to total depth of the hole at 3653 feet preparatory to setting 8¼-inch casing. The deep test of Rycade & Amerada, Seaburn 2, at Stratton Ridge, is drilling in lime at 7180 feet.

Producer is Completed at Lake Barre Dome, Louisiana

Houston.—Production in the Lake Barre field, Louisiana Gulf Coast, will likely show a substantial increase as result of completion last week of The Texas Company's Lake Barre 9, located on the southwest side of the field. This marks the completion of the sixth producing well there. It was brought in flowing at the rate of 360 barrels daily from 3816 feet. Casing was set at 3804 feet with 45 feet of screen set on the bottom of the hole.

The first well drilled in the field, Lake Barre 1-A, was abandoned July, 1929, at total depth of 1610 feet after salt had been hit at 852 feet. There are now five producing wells in the field, excluding the one just completed, which have been making a daily average production of 2800 barrels. The field has produced altogether, over 462,000 barrels of oil since the first producer was brought in.

Operations in the field at present are very limited, Lake Barre 6 having completed capping piling for the derrick and Lake Barre 8, the only active test, is drilling in gumbo at 5810 feet. Casing was set in the well last week at 4080. Lake Barre 10, 11, 12, 13, and 14 are all locations.

Houston.—Activity in the Texas Gulf Coast resulted in four completions, with three proving production. The effect of operations being carried on in the East Texas fields has been felt in this area as well as in all the areas surrounding that district, many of the operators having moved material and equipment to the locations in that field and others shutting down on operations because of the lowered price in crude and curtailment of production. Only four new locations were made during the past week.

Set 3700 Feet 10-Inch Pipe In Northern Mexico Wildcat

Monterrey, Mexico.—Compania de Petroleo Mercedes, headquarters of which are located here, recently set 10-inch casing at 3700 feet in its wildcat test located 10 miles northeast of Cerralvo, State of Nuevo Leon. The well is being drilled with cable tools.

Location of the test is 4½ miles west of the town of General Trevino and seven miles south of Agualeguas, along a faulted and folded zone west of Aldamas. It was spudded September 26, 1930. The surface formation is Midway.

Compania de Petroleo Mercedes is also drilling another wildcat in Northern Mexico, namely, Rio Bravo 1. This well, located south of Reynosa, Texas, is now drilling below 1800 feet, using rotary method and employing some of the finest equipment ever assembled, including two giant Diesel oil engines. At depth of 1410 feet from the rotary floor a string of 13⅝-inch casing was set in hole which had been drilled with 18-inch bits.

Northern Mexico Wildcat Abandoned at 7897 Feet

Laredo, Texas.—Compania Petrolera Tamaulipas has abandoned its deep test on Guerrero dome, northern Tamaulipas, Mexico, after giving it the distinction of being the deepest hole ever drilled anywhere outside the United States. The well, Guerrero 3, was finally abandoned a short time ago at 7897 feet in Upper Cretaceous formation.

Although located on the crest of a very promising structure, the test did not encounter any oil or gas showings, and to the surprise and disappointment of the owners, penetrated an abnormally great thickness of the Midway (lowermost Eocene Tertiary) formation. It started in upper Wilcox (Eocene) formation, drilled through it, hitting top of Midway at 2287 feet, and continued in the latter formation, consisting of sandy shales and shales principally, and a few sands, until within a short distance of the final depth.

While designated as Guerrero 3, this deep well was the first test drilled on the structure. It was drilled entirely with rotary equipment. Total cost of the well was in excess of $200,000. Location for it was made June 15, 1929, and it was spudded July 15, 1929. Total time, therefore, from spudding date to abandonment, was approximately 20 months, although there were within that period several shut-down intervals.

Guerrero 3 started with a 20-inch hole, and 15½-inch casing was set at 449 feet. The only other casing used was 10-inch, which was cemented at 3404 feet. The remaining distance to the bottom, 4493 feet, was open hole, 9⅞ inches in diameter.

Fuel oil was hauled to the site by trucks from the Escobas or Muckelroy field, Zapata County, Texas, via Zapata on the Rio Grande, a total distance of over 40 miles. Materials were hauled in by trucks through Zapata also. Water was piped to the location from the Rio Salado, distance of 17½ kilometers.

Guerrero dome or anticline is about mid-way between the towns of Guerrero, Tamaulipas, and Paras, Nuevo Leon. The deep test, located on the southern portion of the structure, was about 18 miles south of Zapata, Texas, on an air line and 24 miles southwest of the Charco Redondo oil field, Zapata County, Texas.

Information is not available as to future plans of Compania Petrolera Tamaulipas with regard to its Guerrero concessions, which cover most of the structure, although it appears that the deep test has disproved petroleum possibilities of the structure at least with respect to wells located on the top of the anticline. Whether or not production might be obtained in wells located on sides or flanks of the structure is of course a different matter, which can be definitely determined only by drilling. While it is a Mexican company, Compania Petrolera Tamaulipas is affiliated with Humble Oil & Refining Company, the concessions covering Guerrero structure being controlled jointly by the Humble interests and the Empire (Henry L. Doherty) interests. Compania Petrolera Tamaulipas maintains headquarters in Laredo, Texas, and in Nuevo Laredo, Tamaulipas, the general manager of the company being Olin G. Bell of Laredo.

Exemplifying the idealized text-book illustration of an anticline, the Guerrero structure is about eight miles long and three miles wide, with two domes at the top of the anticline, separated symmetrically by a central saddle. Location of the deep test was at the crest of the south dome.

Regarding possibilities of production from flanks of the structure, it may be pointed out that a hand-dug well, 16 feet deep, on a flank of the structure in the San Francisco Grant has a live gas seepage, and it furnished one of the earliest indications of the possible presence of petroleum.

Louisiana--Arkansas Field Notes

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Zwolle Southeast Extension Pushed Two Miles Northeast

Shreveport.—Production in the southeast extension of the Zwolle field of Sabine Parish was extended two miles northeast Sunday night, March 22, when Merritt, Trustee's Byrd 1, which is 200 feet north and west SEc NW Section 1-7-11, was completed at 2445 feet flowing 700 barrels of pipe line oil daily through two-inch choke. This test is three miles due east of producing wells in Section 4-7-11 and two miles northeast of the farthest east edge well, The Texas Company's Stoker 1, Section 10-7-11. This makes the Zwolle field now 21 miles of freakish territory from east to west in an inverted crescent shape.

Byrd 1 is the first well completed in Zwolle in sand since the discovery well in Section 14-7-14 was completed in November, 1928, all other producers having yielded from marl or chalk now termed Zwolle marl and chalk. The new producer which has elevation of 280 feet, reached base of a black shale at 2397 feet, penetrated a few inches of a soft lime a few inches of gas rock and went into the sand. Whether this is a stray sand above the Zwolle marl and chalk or whether the Zwolle marl and chalk has been pinched out here is a matter of discussion among geologists. Those holding that the Zwolle marl has not been reached point to an early test before the Zwolle area was open in Section 9-7-12 which secured oil from three feet of sand in a black shale at 2515 feet which was used for fuel and later the well was deepened to 2540 feet where the marl was encountered.

A test in Section 10-8-11, northeast of production, recently had streaks of a fine sand showing oil from 2163-72 feet and then entered black shale to 2211 feet when the marl was topped. The discovery well in west Zwolle produced from a sand immediately overlying the marl, this sand not appearing in offset wells.

Texas East Border Counties Receive Two Wildcat Tests

Shreveport.—Sinclair Oil & Gas Company, during the week ending March 21, spudded two wildcat tests in east border Texas counties and acquired a half interest in another drilling operation along with 1500 acres surrounding it.

Sinclair Oil & Gas Company's Wright-Braden 1, Jacob Grover Survey, Marion County, on a 4000-acre block, was spudded and late in the week the test was drilling below 700 feet. The same company's Davenport 1, J. V. Morton Survey, west Harrison County, was also spudded. This test is three miles west of Crump and Hannagan's Dunn 1, Bettie Humphries Survey, which went into Georgetown shale without hitting the Woodbine sand. The latter test, however, is still coring ahead.

Sinclair Oil & Gas Company acquired a half interest in W. G. Ray Drilling Company's Hall 1, D. Davis Survey, Harrison County, which is shut down in shale at 2000 feet. Claunch and associates have derrick up for Laun 1, Henry Fugham Survey, Marion County.

Unverified reports are to the effect that Carona Petroleum Company's Bohler 1, S. F. Sparks Survey, Harrison County, elevation 310 feet, had topped Pecan Gap at 1940 feet and was shut down at 2000 feet waiting more equipment This test topped the Nacatosh at 1437 feet.

Simms Makes Crude Trade With Missouri Pacific Line

El Dorado, Ark.—Simms Oil Company, under an agreement recently consummated, will deliver to Missouri Pacific Railroad 548,500 barrels of fuel oil in tank car shipments in return for a similar amount of heavy Smackover oil which Missouri Pacific Railroad has in storage in South Arkansas.

Lion Oil Refining Company, one of the larger independent companies, and which has large refining facilities here, as well as considerable South Arkansas production, is reported checking the holdings of Shell Petroleum Company in South Arkansas.

Woodley Petroleum Company of Shreveport is demolishing two 55,000-barrel tanks and one 25,000-barrel tank in the Smackover field. One of the larger tanks will be shipped to Abilene, Texas. The destination of the others is unknown.

Market Uncertainty Causes Zwolle Field Abandonments

Shreveport.—The present uncertainty enveloping the future of the oil market was assigned as the reason that Loring Oil Company (Benedum and Trees) has decided not to drill a 6000-7000-foot test for the upper Trinity in the Zwolle field in Sabine Parish. Announcement was made during the week ending March 21 that location for Bowman-Hicks 16, NW NW Section 9-7-12, had been abandoned. Original plans were to cement 10-inch casing at top of the Zwolle marl or chalk at 2000 to 2500 feet and prospect for the Trinity zone.

Twelve miles south of Zwolle production and in the southern part of Sabine Parish, Magnolia Petroleum Company last week abandoned Lucius 1, NW NE Section 2-5n-12w, as a dry hole at total depth of 4480 feet in lime rock; 13⅜-inch surface casing had been cemented at 204 feet. Base of a hard lime was reached at 4060 feet. This test showed a trace of oil at 2595-99 feet immediately under a sand showing salt water.

Ohio Oil Company completed Bowman-Hicks 6, SE NW Section 2-7-12, in the south extension of the Zwolle east field as a 30-barrel pumper in chalk rock at total depth of 2509 feet; 6⅝-inch casing was cemented at 2000 feet. To

fulfill drilling obligations Ohio Oil Company during the week made four new locations in the Zwolle east field, the only new operations announced in that district, except a test in Section 1-7-12 by Natural Gas Products Company, discoverers of the Trinity gas horizon in Bethany, Panola County, Texas. It is this company's first attempt in Zwolle.

One new location in Pleasant Hill, Sabine Parish, one in Monroe gas field, in Union Parish, and three in the northern part of the Richland Parish gas area, comprised the other new operations for the last week in North Louisiana. No new producers were completed in proven areas.

Many stripper wells in North Louisiana are expected to be closed down as a result of the present low crude oil prices and the heavy severance tax prevailing in this state. The severance tax in Louisiana is especially burdensome to light oil, it being predicated on a gravity basis, and being as high as 11 cents per barrel for 41 gravity oil. There are several hundred stripper wells in the light oil districts of North Louisiana, especially Pine Island, in Caddo Parish. Some of these wells have been pulled for a production of as low as one barrel daily. Operating costs cannot be met on the smaller stripper wells at 67 cents per barrel price after 11 cents severance tax is deducted.

Natchitoches Parish Wildcat May Have Woodbine Sand

Shreveport.—After drilling through 11 feet of hard lime from 4028 to 4039 feet the bit dropped 10 feet into a sand identified by the geologists on the well, H. D. Easton, as Woodbine, in W. M. Coates and associates' Collins 1, SW NW NE Section 28-9-10, Natchitoches Parish, Louisiana, a wildcat, during the week ending March 21. Subsequent cores to a depth of 4080 feet have shown red shale and strata of sand with light oil having appeared in the returns. On Sunday, March 22, operators were trying for another core. Easton further claims that the formation encountered is the shoreline of the Woodbine on the southeast flank of the Sabine Uplift, which if correct, is of great significance, as it would indicate probability of oil production on the Woodbine shoreline of the southeast flank of the Sabine Uplift.

Present Woodbine production in Rusk and Gregg Counties in Texas is considered as being on the shoreline along the west and southwest flanks of the Sabine Uplift.

The Collins 1 showed some oil in the marl formation picked up considerably higher than wells in the Zwolle east field of Sabine Parish, 12 miles to the southwest. At 2224 feet Coates cemented 8¼-inch casing. The test is located in the village limits of Marthaville and is on a 4500-acre block.

W. M. Coates and associates' Collins 1, SW NW Section 28-9-10, Natchitoches Parish, which showed oil in a broken sand and shale formation from 4039-80 feet identified as Woodbine on a shoreline on the southeast flank of the Sabine Uplift, on Sunday night, March 22, tested 15 joints of salt water in 10 minutes in a drill stem test after the hole had been deepened to 4091 feet. Elevation of the test is 260 feet. Top of the Zwolle marl which showed traces of oil was topped at 2180 feet. Operators Monday, March 23, were shut down waiting orders.

▼ MISSISSIPPI ▼

Limits of Jackson Gas Field Are Now Fairly Well Defined

Jackson, Miss.—One attempt at a northeast extension of the Hinds County part of the Jackson gas field that ended in failure, and a gasser on the southwest edge of the gas producing area in the same county, a fourth mile north of a well which has shown more oil than any well in Mississippi, featured activity in this field during the week ending March 21.

Gulf Refining Company abandoned McLarin 1, 1410 feet west and 1230 feet south of northeast corner Section 30-6-2e, Hinds County, in green sandy shale at total depth of 2950 feet. This test two miles northeast of gas production had topped Midway black shale at 2392 feet, topped Midway chalk at 2485 feet and after sidetracking at 2485 feet reached base of the chalk at 2875 feet. Nine-inch casing was cemented at 2466 feet.

The limits of the Jackson field are now fairly well defined in every direction except to the west. The field extends approximately four miles from northwest to southeast through the heart of the city of Jackson and approximately three miles northeast-southwest.

In the southwest part of the gas area Love Petroleum Company's Maley 2, NE NW Section 15-5-1e, came in March 18 after bailer was run only a few times, estimated at 40,000,000 feet of gas daily from total depth of 2458 feet, Midway shale having been topped at 2355 feet and chalk at 2445 feet, where 6⅝-inch casing was cemented. Elevation was 267 feet. This well is a quarter-mile north of Maley 1, SE NW Section 15-5-1e, which made over a period of several weeks, several hundred barrels of a heavy oil of 13 to 14 gravity from total depth of 2495 feet along with considerable salt water and about 3,000,000 feet of gas daily. This latter well is on the southwest limits of production. In NE SW Section 15-5-1e Cane River Oil and Gas Company's Kabbes 1 is shut down at 3270 feet.

One new location was announced in the Jackson field during the last week, this being Hester and associates' Ellis 1, NE SW Section 12-5-1e, Rankin County, in the southeast part of the field.

Gulf Refining Company's Box 1, NW SE Section 11-2n-11e, a wildcat in Clarke County, East Central Mississippi, has picked up a formation that has been tentatively identified as Selma chalk after topping a black shale at 2205 feet, elevation being 221.2 feet, and late last week was drilling chalk at 2729 feet. The chalk is reported to have been encountered at 2660-65 feet. This is the first test on a large block that was thoroughly core drilled last summer and autumn.

Amory Petroleum Corporation's Harris 1, NW NE Section 18-13s-17w, Monroe County, Amory district, Northeast Mississippi, is ready to drill plug after six-inch casing was cemented at 2324 feet, elevation being 455 feet, this test having checked 26 feet high in encountering the gas sand.

Jackson, Miss.—Pocahontas Natural Gas Company, drilling Adams Banks 1, SW NW Section 10-3n-7e, Smith County, Mississippi, 100 miles southeast of Jackson on March 21, penetrated a Wilcox boulder at total depth of 2307 feet, elevation being 425 feet, and began losing returns. A drill stem test probably will be made at this depth.

Completions for Past Week in U. S. Fields

▼ ▼ ▼

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
BRADFORD FIELD—		
South Penn Oil Co., Melvin 292	2	....
S. H. Elder, Elder 17	3	....
W. & W. E. Parmenter, Parmenter 12	7	....
Healey Petroleum Co., Fee 52	2	....
A. J. Foster, Quintruple 1	4	....
Walter & Passmore Mack 1	2	....
BUTLER COUNTY—		
Bauldorf & Larkin, Jackman 2	2	....
Ingold & Ruby, Hockenberry 19	2	....
CLARION-VENANGO COUNTIES—		
F. G. Yonkers, Kapp 5	12	....
United Natural Gas Co., Ziegler 3978	¶1	....
Braunschweiger & Co., McFadden 20	2	....
W. J. Stephensm Dawson 19	2	....
Oil City National Bank, Carter 11	2	....
CENTER-MIDDLE FIELD—		
Duke, Buck & Co., Scio 1	4	....
Duke 1	10	....
TIOGA COUNTY—		
G. A. Williams, Husted 1	¶5	....
J. E. Trainer & Co., Bostwick 1	*	4248
John Cunningham, Howard 1	*	....
GREENE COUNTY—		
Convex Glass Co., Titus 1	¶½	2290
Union Gasoline & Oil Co., Livengood 1	¶½	3275
Peoples Natural Gas Co., Haines 1	¶¼	893
Manufacturers Light & Heat Co., Hudson 1	*	3224

NEW YORK

YATES COUNTY—		
Oriskany Drilling Co., Deyra 1	*	....
ALLEGANY COUNTY—		
Sepany Oil Co., Zapp 1	3	....
Stewart 1	5	....

WEST VIRGINIA

CALHOUN COUNTY—		
Southern Oil Co., Maze 1	¶½	....
Hope Construction & Refg. Co., Starcher 7514	¶¼	2276
CLAY COUNTY—		
Godfrey L. Cabot, Inc., Hill-Long 8	¶½	2239
DODDRIDGE COUNTY—		
Columbia Carbon Co., Maxwell 60	¶½	....
HARRISON COUNTY—		
Furner Oil Co., Furner 8	2	2996
LINCOLN COUNTY—		
L. R. Sweetland, Hoskinson 1	¶¼	2385
MARSHALL COUNTY—		
Owens-Illinois Glass Co., Tennant 2	¶¼	2387
PLEASANTS COUNTY—		
L. C. White & Co., Newland 1	5	....
WETZEL COUNTY—		
Wade, Carney & Co., Lemaster 1	4	2990
R. V. Hennen, Trustee, Alexander 1	*	2950
Null & Morehead, Shidall 1	¶½	3040

SOUTHEASTERN OHIO

MONROE COUNTY—		
Louis Timblin, Bode 12	1	1410
Shay McMullen, Hines 4	¶¼	1857
Wittmer Oil & Gas Co., Sawyer 1	*	1902
S. B. Niez, Niez 9	*	1510
NOBLE COUNTY—		
Everet Barbacher, Calland 1	¶¼	1789
WASHINGTON COUNTY—		
John T. Clarey & Co., Morningstar 2	5	622
John Wynn & Co., Wynn 10	1	905
Yaw Oil & Gas Co., Nolland 2	¶½	1376

CENTRAL OHIO

ATHENS COUNTY—		
Standard Natural Gas Co., Roach 1	¶¼	1184
Snider & Co., Jackson 1	¶½	3253
C. W. Nuzum & Co., Brechtel 2	¶¼	1415
Gifford & Co., Wyatt 2	¶¼	1443
PERRY COUNTY—		
Atha Oil & Gas Co., Melick 17	60	3085
Kistling & Co., Huston 1	¶¼	762
MUSKINGUM COUNTY—		
Wittmer Properties Trustee, Chaplin 2	¶¼	4058
TUSCARAWAS COUNTY—		
Oxford Oil & Gas Co., Lamneck 4	¶¼	3654
MEDINA COUNTY—		
Edson & Co., Frank 15	*	473

For Tabulation and Comparison See Market Section

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
HARDIN COUNTY—		
Ohio Fuel Gas Co., Oats 1	*	1349

INDIANA

JAY COUNTY—		
R. D. Hance, Ohler 1	3	....
KNOX COUNTY—		
Gardner Petroleum Co., Hall 2	¶½	....
MONROE COUNTY—		
Petroleum Exploration Co., Baxter 1	*	730
PERRY COUNTY—		
Seitz & Co., Seibert 1	*	....
Conyers, Bugg & Co., Franchville 1	20	....
Cassidy 3	30	265
SULLIVAN COUNTY—		
H. Huntsman & Co., Piety 2	¶1	350
Jas. C. Ellis & Co., Martz 1	*	....
VANDERBURG COUNTY—		
Vanderburg Oil Corp., Hornby 2	5	....

KENTUCKY

MUHLENBERG COUNTY—		
George Engle & Co., Drake 1	*	1204

MICHIGAN

ISABELLA COUNTY—		
Mellon-Pollock Oil Co., Durnier 1	130	2770
MISSAUKEE COUNTY—		
Henry Miltner Trustee, Miller 1	¶½	....

KANSAS

GREENWOOD COUNTY—		
Empire O&R et al, Johnson 2, cel ne ne 8-25-13e	20	1457
HARVEY COUNTY—		
Alco Royalty Co., et al, Hiebert 1, ne se se 5-22-3w	*	3810
McPHERSON COUNTY—		
W. E. McBride, Inc., Giffin 2, c se sw 14-19-2w	¶15	2920
Helmerick & Payne & Shell, Koehn 1 (owd) c se 12-20-2w	*	3414
SALINE COUNTY—		
Deitrich & Smoky Hill Oil Co., Suddendorf 1, ne c se 30-14-2w	*	3510
SEDGWICK COUNTY—		
Vickers Pet. Co., Keys 3, (owd) sw nw ne 30-27-2e	420	2987
Stearns & Streeter et al, Toben 1, sw se ne 5-27-2e	*	3352

OKLAHOMA

COMANCHE COUNTY—		
Pace et al, Pruitt 1, c sw se 8-1n-9w	*	2042
Oklahoma Nat. Gas Co., Doebel 1, ne c sw sw sw 3-3n-9w	*	1450
COTTON COUNTY—		
Shasta Oil Co., Tilley 1, cnl ne ne 23-1s-10w	*	2510
GRADY COUNTY—		
Badgett & Cooper, Mileur .1, nw c sw 24-4n-8w	¶10	2015
Meridian Gas Co., Snodgrass 1, csl ne ne 36-4n-8w	¶½	2060
HARMON COUNTY—		
Harmon-Tex Oil Co., Headley 1, ne c 17-4n-24w	*	2592
HUGHES COUNTY—		
Gilcrease Oil Co., Buckner 1, ne nw se 17-7n-9e	*	3755
JEFFERSON COUNTY—		
O. V. Beck, Seay 6, ne c nw sw se 34-6s-5w	175	1520
MUSKOGEE COUNTY—		
C. D. Bradley, Jacobs 1, ne c se nw 7-15-17e	*	1016
P. Boyle et al, Ware 3, se c ne sw ne 14-15-15e	*	1510
W. J. Metzger et al, Crittenden 8, se c sw ne se	*	820
OKLAHOMA COUNTY—		
Anderson-Pritchard, Gibbons 4, ne c se se ne 2-11-3w	1360	6354
Phillips Pet. Co., Bouldinghouse 1, sw c ne ne nw 10-11-3w	9010	6326
Eason Oil Co., et al' Lively 1, se c ne nw se 15-11-3w	1965	6445
OKMULGEE COUNTY—		
Denton & Marshall, Rentie 1a, cwl nw sw 13-14-14e	*	2383
PITTSBURG COUNTY—		
Midwestern O&G, Trekell 2, nw ne nw 14-7-18e	¶23	1849
POTTAWATOMIE COUNTY—		
Gypsy Oil Co., Horn 4, ne nw ne 23-6-3e	1260	3465
SEMINOLE COUNTY—		
Pace Pet. Co., Townlot 1, sw c se ne 30-8-8e	8	3240
Magnolia Pet. Co., Harjo Reed 1, se nw nw 2-8-5e	480	4055
Gypsy Oil Co., Charity 2, se c sw 29-6-6e	*	2624
STEPHENS COUNTY—		
A. L. Andree, Patrick 1, c s½ se 3-3s-8w	*	2759
Cooper et al, Duncan 1, nw c ne 28-2s-7w	*	1699
Head & Couch, Wilson 1, nw c sw 2-2s-5w	*	1915
Junior Oil Co., Thompson 1, ne c sw se 1-1n-7w	*	3329
Smythe et al, House 2, nw c 29-2-8w	*	2800
Morrison, Hightower 2, ne c sw ne 15-3s-5w	¶17	920
Geo. Pace, Bush 5, sw c se ne nw 3-2s-8w	15	1637
Geo. Pace et al, Watkins 8, se ne se 21-2s-7w	400	1722
Watkins 9, nw c ne se se 21-2s-7w	300	1716
The Texas Co., Toney 1, se c sw nw 27-2s-7w	10	1498

CALIFORNIA

PLAYA DEL REY—		
Lubrite Oil Co. No. 2	1550	5876
Senator Oil Co., Heney 2	300	4736
LONG BEACH—		
Dabney-Johnson Corp. No. 79	60	7050
MT. POSO CREEK—		
General Per. Corp. Sill 4	200	2157
VENTURA AVENUE—		
Shell Oil Co., Taylor 60	200	6650

LOUISIANA GULF COAST

BLACK BAYOU—		
Freeport Sulphur Co., Yount-Lee 8	*	1344
LAKE BARRE—		
The Texas Co., Lake Barre 9	360	3816
LAKE PELTO—		
The Texas Co., Lake Pelto State 4	*	50
Lake Pelto State 5	*	75
LOCKPORT—		
Vacuum Oil Co., Miller 31	300	4382
ST. MARTINSVILLE—		
Harrison & Abercrombie, Barras 1-A	*	6696

TEXAS

TEXAS GULF COAST

BARBERS HILL—		
Humphreys Corporation, L. E. Fitzgerald 1	1600	5245
HUMBLE—		
Sun Oil Co., Bender 20	570	3831
MONTGOMERY COUNTY—		
Humble O&R Co., Brautigan 1-A	*	1202
SARATOGA—		
Rio Bravo Oil Co., Cotton 109-A	20	570

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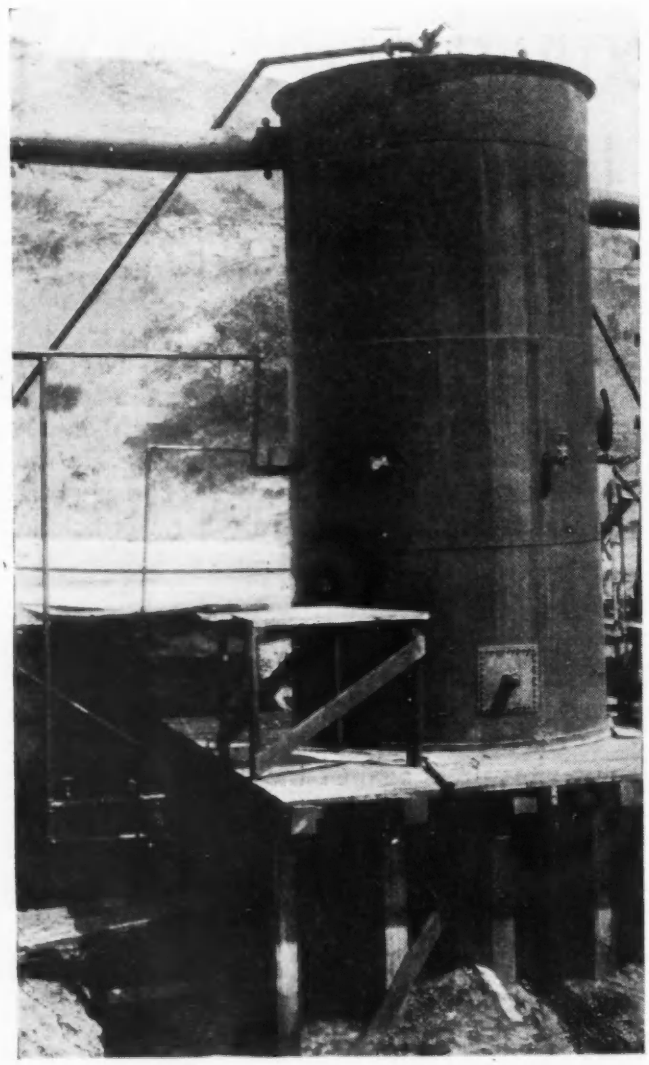
TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
Continental Oil Co., Jordan 1-A	¶3	3134
GRAY COUNTY—		
Magnolia Pet. Co., Latham 4	¶40-5000	2923
McElroy Oil Co., Baer 1	110	3249
Sun Oil Co., Coombs-Worley 2	¶9-410	2935
HUTCHINSON COUNTY—		
Prairie O&G Co., Johnson 70-A	¶4-2	3108
MOORE COUNTY—		
Shamrock O&G Co., Coffee 1-C	55	3544
POTTER COUNTY—		
Canadian River Gas Co., Crawford 1-B	*	2250
WHEELER COUNTY—		
Remo Oil Co., DeSpain 1	*	2505

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Continental Oil Co., Falls County fee 1-E	110	1120
Conoco & Gilliland-Roeser, Morrison 1	15	1282
P. F. Gwynn et al, Falls County fee 1	15	1110
Tom F. Hunter Oil Corp., Wagner 1-C	*	1454
King & Hays, Speer 1	*	751
Long & The Texas Co., Richardson 2-B	*	1340
COOKE COUNTY—		
Benson & Benson, Koelser 1	*	1769
Lloyd Oil Corp., Dove 1	*	2005
Texas Pacific Coal & Oil Co., Jacobs 1	10	1582
JACK COUNTY—		
Brazos River Gas Co. & Gulf, Clayton 1	¶3¼-250	2945
WICHITA COUNTY—		
R. L. Arrington et al, Overall 1	5	835
Clark & Waggoner, Ward-Todd 4	*	1808
T. F. Hunter Oil Corp., American Ref. Co., fee 4	*	1558
John O'Neil et al, Woodruff 1	*	930
WILBARGER COUNTY—		
The Texas Co., Waggoner 393	*	1090
Waggoner 396	15	1053
NORTH YOUNG COUNTY—		
Alexander et al, Jeffery 1-F	*	903
P. F. Gwynn et al, Jeffery 4	250	744
J. H. Kleiner et al, Belknap 1	*	722
Kleiner & E. R. Riggs, Larimore 7	10	709
Oil News Pub. Co., Cox 1	*	594
Putnam Oil Co., Routon 2	*	794
E. R. Riggs et al, Larimore 18	240	718
G. F. Taylor et al, Sanders 1	*	605
Wooten & Reed, Robinson 2	*	675
SOUTH YOUNG COUNTY—		
Panhandle Ref. Co., Steele 1	¶12-15	2394



Typical large sand trap installation in the Cat Canyon field, California

CENTRAL WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BROWN COUNTY—		
Beasley et al, Dabney 1	*	1825
Stratton & Gully, Armstrong 2	*	1431
COLEMAN COUNTY—		
Capital City O&G Co., Hubbard 1	*	3622
E. L. Smith Oil Co., Thate 1	*	1516

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CRANE COUNTY—		
Gulf Prod. Co., J. T. McElroy 91	522	2970
PECOS COUNTY—		
C. L. Dittman Oil Co., Jackson 1	*	1596
Tex-Mex Pet. Corp. (Lancaster), Eaton-Pure 1	135	1616
UPTON COUNTY—		
G. E. Farley et al, John F. Lane 1	310	2391
WARD COUNTY—		
Gulf Prod. Co., O'Brien 16	200	2670
Prairie O&G Co., Hill 1	75	2405

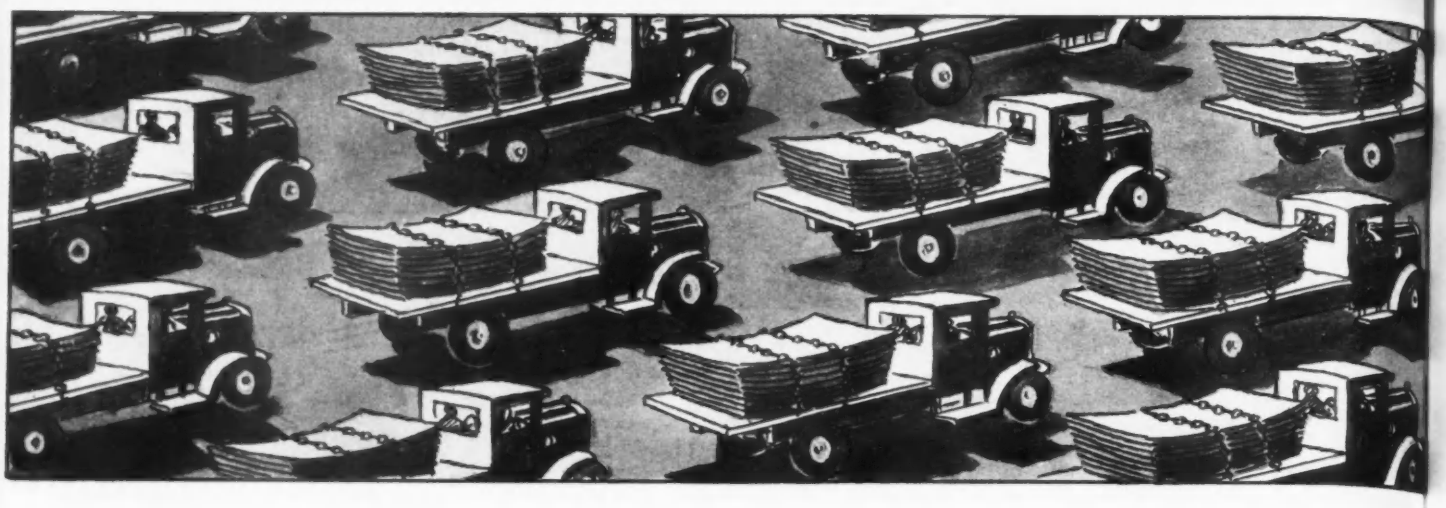
CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
GREGG COUNTY—		
Magnolia Pet. Co., B. E. Rodden 1	15,000	3616
K. E. Merren-Van Horn & Miller, Maude Smith 1	*	3605
Navarro Oil Co., G. B. Tenery 1	7500	3603
W. C. Ray Drilling Co., Maud Smith 1	*	3555
O. L. Hickman et al, Maud Smith 1	*	3550
RUSK COUNTY—		
Bill & Dave Oil Co., Young 1	3000	3690
Burton Drlg. Co. & Sabine Synd., E. B. S. Florey 1	10,000	3729
C. P. Oil Co. (Roy I. Carter), Mayfield Alford 3	1500	3674
East Texas Ref. Co., Giles 1	4000	3715
Federated Oil Co., Mayfield Alford 2	1500	3660
Frank Foster-Deep Rock Oil Co., Ashby 2	750	3664
Fox-Butler & Heflin, Thrash 1	4000	3698
W. B. Hamilton-Consolidated Oil Co.-Trico & Jenkins, Camp 2	1200	3681
Jobe 1	1500	3605
Humble O&R Co., L. D. Crim 5	10,000	3690
Ed. M. Jones-Houston Oil Co., J. M. Crim 1-B	8500	3695
Luling O&G Co., W. P. Brightwell 1	15,000	3630
John E. Mabee, Inc., Thrash 1	3000	3684
Magnolia Pet. Co., Della Crim 2	15,000	3617
Della Crim 3	*	3536
Della Crim 4	20,000	3660
Petroleum Marketing Corp., A. J. Deason 1	3000	3690
VAN ZANDT COUNTY—		
Humble O&R Co., R. S. Blake 10	1500	2943
Sun Oil Co., T. J. Wallace 2	10,000	2944

SOUTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BEE COUNTY (Pettus)—		
United Prod. Co.'s Ray 31	425	3975
BEXAR COUNTY—		
Penn Oil Co 's Cooksey 1 (wo)	5	1475
DUVAL COUNTY—		
Duval Oil Co.'s Bishop Cattle Co. 1	1550	2412
GUADALUPE COUNTY (Darst Creek)—		
Humble O&R Co.'s Denman 23-A	800	2348
Sun Oil Co.'s Dowdy 1	75	2593
KINNEY COUNTY—		
Magnolia Pet. Co.'s Wardlow 1	*	5280
LIVE OAK COUNTY—		
Jacob, Buzzini & Pickett's Kay 1	*	4290
Phillips Pet. Co.'s Goebel 1	*	3350
REFUGIO COUNTY—		
Dash Prod. Co.'s W. Upton (blk. 86)	450	6459
E. M. Jones' J. Mitchell 2-B	40	6468
Moody-Seagraves Prod. Co.'s St. Johns 1-B	75	5478
1-B	75	5478
O'Conner 6	*	6474
Saxet Oil Co.'s Wilson Heard 4-A	51	3685
WEBB COUNTY—		
Cole Pet. Co.'s Benavides 3	*	1578
ZAPATA COUNTY—		
Brooklyn Oil Co.'s Cuellar 1	*	1862
Claypool & Nixon's Garza 3	175	1405
A. R. McLennan's Cuellar 2	¶8	1735
Shankle & Murray's F. Cuellar 1	¶40	1684
W. R. Shankle's Garza 2	12	1410

Nothing Can Stop Them



"Nothing Can Stop Them"!

LEMMINGS resemble heavy field mice, with short tails. They live in the Arctic Region, among the moss, and do not hibernate. They multiply rapidly, and at times the increase is so great there is not enough food, so hordes of them start on a pilgrimage, eating all available vegetation in their path. Sometimes these advances continue for more than one season, although the numbers are greatly depleted by animals which follow and prey on them. But NO OBSTACLE HINDERS THEIR PROGRESS. They swim streams and lakes—AND NOTHING CAN STOP THEM.

Like the myriads of Lemmings, if all the B. S. & B. trucks were placed together they would form a tremendous procession—a parade of hundreds of them manned by scores of experienced tank crews. These trucks, symbolical of B. S. & B. Service, continue onward—AND NOTHING CAN STOP THEM.

"Service on the Dot"

B.S.&B. Service

"Service on the Spot"

Erection - Inspection - Re-Erection

With 50 Field Stations, extending throughout the Mid-Continent and Rocky Mountain Fields, and even to Canada and South America—with complete stocks and trained tank crews ever available, NOTHING CAN STOP US from a quick and thorough service. Your tanks are erected on your lease in a few hours after the order has been released.

Then should your location be changed, or you want to use your tanks in another field, you may procure our Service—re-erect them elsewhere—they being shipped by truck or rail to the nearest B. S. & B. Branch in the field.

B. S. & B. Service is also provided on the B. S. & B. Safety Steel Walkways and Stairways.

B.S.&B. Perfection TANKS

If you are not familiar or acquainted with the B. S. & B. PERFECTION Vapor Pressure Tanks, it will be to your interest and profit to become so. These tanks are built like a skeleton—with a complete framework, making them more than a shell. They are more than leak-proof, and airtight—*vapor pressure tight.* They hold the lighter fractions to beyond the average maximum pressure or vacuum created in ordinary field use. The B. S. & B. Thief Hole Pressure Vacuum Valve operates automatically at 16 ounces pressure, or 2 ounces vacuum. Therefore, the crude is kept intact without evaporation, and is maintained at well-head gravity.

To tell you our story about our tanks is to sell you, because of their many benefits and unusual features. May a representative call to talk tanks, if you are interested in them, or may we discuss them by letter and literature? Address Dept. X-19.

PRODUCTS B S&B SERVICE

Our Watchword QUICK SERVICE

Black Sivalls & Bryson INC.

BARTLESVILLE - OKLAHOMA

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Permits Granted for New Wells

▼ ▼ ▼

For Tabulation and Comparison See Market Section

LOUISIANA

CADDO PARISH—Shreveport Oil Corp.'s Hicks 8, 32-21n-15w, approx 600 ft s and 860 ft e of nw cor of sec. Trio. Synd. Irving E., Wheatcroft, Tr., Caddo Levee Bd. 2, 17-20n-15w, 505 ft e and 222 ft s of nw cor of sec.

SABINE PARISH—O. A. Gautier, Zwolle, Meshell 1, 30-8n-12w, 170 ft n and 330 ft e of sw cor se¼ of nw¼. Ohio Oil Co., Shreveport, Bowman-Hicks Lbr. Co. 8, 2-7n-12w, 330 ft n and 330 ft e of sw cor nw¼ of ne¼; 9, 35-8n-12w, 250 ft n and 330 ft e of sw cor nw¼ of se¼; 10, 35-8n-12w, 330 ft n and 330 ft e of center of sec; 11, 2-7n-12w, 330 ft n and 330 ft w of se cor sw¼ of nw¼.

KANSAS

GREENWOOD COUNTY — Braden et al's Souder 1, sw ne se 13-23-12.

SEDGWICK COUNTY—Fisher & Lauck's Souders 1, ne nw sw 1-28-1e.

STEVENS COUNTY — Texas Interstate Pipe Line Co., Howell Rheinhardt 1, c ne, 22-32-39w.

OKLAHOMA

CARTER COUNTY—Carter Oil Co.'s Robb 1, nw sw nw 19-1s-2w.

GRADY COUNTY—J. B. Nichols' Childs 1, ne c 35-4n-8w.

HASKELL COUNTY—I.T.I.O.'s Holleman 1, c sw ne 23-11-21e; Enterprise National Gas Co.'s Phillips 1, ne c 10-9-18e.

MARSHALL COUNTY—R. L. McCrory et al's Little 1, ne c sw 30-7s-6e.

McINTOSH COUNTY—J. S. Routt et al's Eckols 1, sw c se se 10-11-15e.

MUSKOGEE COUNTY—Mack Drilg. Co.'s Peterson 1, sw c nw 34-16-15e; Mazda Oil Co.'s Ingram 1, (owd) nw e ne se 9-15-18e; C. W. Brown's Smith 1, sw c nw 14-15-15e; G. D. Robinson's London 1, cwl ne sw 17-13-16e.

OKLAHOMA COUNTY—R. A. McArthur et al's Alfalfa Products Co. 1, nw c sw ne nw 3-11-3w; Reinhart & Donovan et al 1, sw c ne nw 3-11-3w; Slick Estate's Terminal 1, ne c nw se nw 3-11-3w; Wilcox, Anderson and Kerr's James 1, cnl sw nw nw 10-11-3w; Williams et al's Gunsenhauser 1, cnl ne ne se 15-11-3w.

POTTAWATOMIE COUNTY — Magnolia Pet. Co.'s Harris 1, nw c sw 6-6-4e.

STEPHENS COUNTY — Geo. Pace et al's Bush 1 "C", ne se nw 3-2s-8w.

WAGONER COUNTY—E. C. Peables et al's Chissoe 1, ne c 34-17-15e.

TEXAS

AUSTIN COUNTY—Parmeson & Cafferkey, Houston, Wm. Schlechte, 25, 1, J. Fitzgibbons sur, 189 ft from se and 458 ft from sw line.

BROWN COUNTY—Mac T. Anderson, Rising Star, A. W. Burkett, 100, 1, A. White sur, 1000 ft from n and 600 ft from e li of blk 12.

CASS COUNTY—S. D. Hunter, Shreveport, M. Felker, 66, 1, J. L. Chambers sur, 1800 ft from w and 106 ft from s line.

CALLAHAN COUNTY—Roy Guffey, Baird, E. L. Finley, 80, 2, S 75, Bayland Asy. sur, 500 ft from e and 150 ft from s li n½ ne¼.

CARSON COUNTY—Texas Co., Ft. Worth, G. Schafer, 160, 1, S 68, B 4, I&GN sur, center of sw¼. J. E. Benocz, 100, 1, S 2, B 4, I&GN sur, 817 ft from s and 1182 ft from w li sec.

COLEMAN COUNTY — Brown & Ekholm et al, Coleman, F. Golson, 40, 10, S 164, D. J. Holt sur, 880 ft from s and 150 ft from w li. Jamison, Pollard & Forster, Coleman, H. W. Kingsley, 280, 2, J. A. Cleveland.

COOKE COUNTY—Faith Oil Corp., Wichita Falls, C. J. Felte, 50, 1, D. H. Campbell sur, 150 ft from n and e lines.

DENTON COUNTY — J. W. Peel, Pilot Point, C. Jacobs, 60, 1, R. Prather sur, 150 ft from n and w lines.

DUVAL COUNTY—S. R. & C. Oil Corp. & Vacuum Oil Co., San Antonio, Duval Ranch, 645, 4, S 293, GC&SF sur, 300 ft w of No. 1.

GREGG COUNTY—P. J. White, Shreveport, S. P. Jones, 108, 1, P. P. Rains sur, 150 ft from n and w lines. Pilot Oil Co., Longview, G. E. McGrede, 10, 1, D. Sanchez sur, 150 ft from s and w lines. Oriental Oil Co., Dallas, L. Alexander, 7, 1, M. Van Sickle sur, 152 ft from w and 156 ft from s line. Roeser and Pendleton, Inc., Ft. Worth, B. Rodden, 32, 2, Wm. Robinson sur, 200 ft from nw and 183 ft from w line. Magnolia Pet. Co., Dallas, B. E. Rodden, 42, 3, Wm. Robinson sur, 150 ft from n and e lines; 4, 385 ft w of No. 3. Primrose Refg. Co., Dallas, W. L. Blackstone, 10, 1, W. H. Castleberry sur, 200 ft from s and 150 ft from e line. Arkansas Fuel Oil Co., Shreveport, F. K. Lathrop, 92, C1, Wm. Robinson sur, 300 ft from n and e lines. P. D. Harrison, 128, 1, Wm. Robinson sur, 150 ft from n and w lines.

GUADALUPE COUNTY—T. A. Hornaday, San Antonio, E. V. Echols, 11, 2, Jas. Hodges sur, ne corner.

HARRISON COUNTY—Sinclair O&G Co., Fort Worth, C. L. Davenport, 763, 1, J. V. Morton sur, 660 ft from n and 400 ft from e li blk 11.

HENDERSON COUNTY—E. L. Chapman, Ft. Worth, J. C. Cade, 640, 2, J. B. Dorsey sur, 750 ft from w and 1560 ft from n line.

JACK COUNTY—W. H. Hammon, Wichita Falls, G. C. Booth, 80, 2, S 1, W. C. Ry. sur, 260 ft from s and 750 ft from w li se¼.

JIM HOGG COUNTY—Magnolia Pet. Co., Dallas, Y. V. Cuellar, 1, S 575, W. W. Ferguson sur, center of blk 92.

KENDALL COUNTY — Permian Oil Co., Eastland, W. J. Taylor, 640, 1, S 18, GB&G sur, 2300 ft from n and 1600 ft from w li sec.

LIVE OAK COUNTY—Houston Oil Co., T. G. Parr, 71, A1, J. McMullen sur, 400 ft from nw and 548 ft from sw line.

LOVING COUNTY—Lockhart & Co., Pecos, Bell, 1, S 91, B 1, W&NW sur, 7121 ft from ne and 450 ft from se line.

MARION COUNTY — Sinclair Oil & Gas Co., Ft. Worth, Wright, 1910, 1, J. Grover sur, se corner.

MITCHELL COUNTY — Geo. Goodrum, Colorado, E. M. Conrad, 160, 1, S 90, B 25, Lavaca Navig. sur, 750 ft from n and 900 ft from w li sec.

NAVARRO COUNTY—Lee & Dotson, Dallas, M. J. Williamson, 50, 1, J. McNeal sur, 150 ft from n and e lines.

PALO PINTO COUNTY — McLester Oil Co., Eastland, A. P. Wilbar, 600, 4, J. Latham sur, 1600 ft from n and 5500 ft from e li sur.

RUSK COUNTY—Magnolia Pet. Co., Dallas, D. Crim, 60, 6, R. E. Winn sur, 300 ft w of No. 5. E. Florey, 50, 1, P. W. Holmes sur, 150 ft from n and e lines. Gardner, Mortimer, Tulsa, T. J. Mercer, 80, 1, M. A. Young sur, 150 ft from n and e lines. Woodley Pet. Co., Shreveport, D. Ladd, 2, 1, H. Hobson sur, 175 ft from w and 152 ft from s line. J. N. Peterson, 20, 2, I. Ruddle sur, 260 ft from n and 150 ft from w line. E. R. Tennant, Dallas, D. Bradford, 500, 2, J. Ximinez sur, 150 ft e of center of w line; 3, 150 ft from w and 300 ft from s line. Sinclair O&G Co., Ft. Worth, D. Bradford, 35, 2, J. Ximinez sur, 150 ft from n and e lines. K. & M. Oil Co., San Antonio, L. Toliver, 3, 1, 150 ft from s and w li. L. O. McMillan, Tyler, M. Thompson, 70, 1, Jno. Darley sur, 300 ft from w and 217 ft from s li. Texas Trading Co., Inc., Tyler, A. J. Deason, 6, 1, M. J. Pru sur, 130 ft from n and 150 ft from w li. Moody-Seagraves Prod. Co., San Antonio, A. Thrash, 13, 5, M. J. Pru sur, center. Humble O&R Co., Houston, M. Kangera, 35, 1, M. J. Pru sur, 238 ft from s and 164 ft from e line; M. Kangera, 70, 2, M. J. Pru sur, 210 ft from s and 241 ft from e line. J. W. Olvey, El Dorado, Crim, 20, 1, R. Winn sur, 200 ft from n and 160 ft from e line. E. L. Chapman, Ft. Worth, A. P. Finney, 20, 1, I. G. Parker sur, 150 ft from s and w lines. Burton Drilling Co., Longview, E. B. S. Florey, 50, 1, P. W. Holmes sur, 150 ft from s and e lines. Hadley & Leonard Pet. Co., Washington, Penna., S. E. Adams, 180, 1, J. M. Massey sur, ne corner. E. B. Alford, 10, I. G. Parker sur, 200 ft from n and 230 ft from w li. Cordova-Union Oil Corp., Ft. Worth, C. O. Christian, 36, 2, R. E. Winn sur, 150 ft from s and e lines; 3, 150 ft from w and 450 ft from s line. Karona Oil Co., Corpus Christi, J. N. Peterson, 25, 2, R. E. Winn sur, 150 ft from n and e lines. Horse Shoe Lease Synd., Henderson, W. P. Brightwell, 5, 1, R. W. Winn sur, 150 ft from n and w li. Peery, Woody & Boller, Wichita Falls, A. Thrash, 31, 1, J. Ximinez sur, 150 ft from n and e li; 2, 200 ft from w and 210 ft from s li. Sinclair O&G Co., Ft. Worth, W. W. Holland, 50, 8, J. Ximinez sur, 200 ft from n and 500 ft from w li; 7, 200 ft from n and 500 ft from e li. Tidal Oil Co., Ft. Worth, H. H. Finney, 40, 1, J. Ximinez sur, 150 ft from s and e li. Humble O&R Co., Houston, L. D. Crim, 628, 12, E. G. Sevier sur, 150 ft from s and e li. Jones & Houston Oil Co., Houston, J. M. Crim, 16, 2, H. Hobson sur, 300 ft from w and 150 ft from s line. L. D. Crim, 10, 3, R. E. Winn sur, 416 ft from w and 150 ft from s li. E. R. Tennant, Dallas, H. Brooks, 176, 1, M. J. Pru sur, sw corner.

SHACKELFORD COUNTY — J. W. Radcliffe, Moran, C. B. Snyder, 40, 1, S 56, I.A.L. sur, 1600 ft from s and e li sec.

SMITH COUNTY—C. B. Bunte, Tulsa, A. J. Jarvis, 266, 1, J. Vargas sur, 150 ft from s and w li. Howard Pet. Corp., Tulsa, E. G. Holt, 57, 1, B. Clark sur, 330 ft from s and e lines.

THROCKMORTON COUNTY — Swain & Holcomb, Burkburnett, K. J. Wright, 100, 1, 993, TE&L sur, 150 ft from w and 1100 ft from s line.

VAN ZANDT COUNTY—Pure Oil Co., Ft. Worth, A. F. Magers, 72, 2, N.C.S.L. sur, 250 ft from s and e lines. W. T. Jarman, 8, 7, N.C.S.L. sur, 250 ft from n and w li. R. E. Cade, 50, 3, A. McPhail sur, 225 ft from w and 450 ft from s line. A. R. Tunnell, 101, 6, Jno. Walling sur, 150 ft from w and 205 ft from s li. E. York, 40, 5, Walling sur, 200 ft from w and 250 ft from s li. B. E. Crim, 10, 2, Jno. Walling sur, 200 ft from e and 250 ft from s li.

VICTORIA COUNTY—Lion O&R Co., El-Dorado, J. A. McFadden, 500, 3, C. O. Edwards sur, 3530 ft e of No. 1.

WASHINGTON COUNTY — Sun Oil Co., Beaumont, B. R. Clay, 757, 5, J. F. Perry sur, 200 ft from sw and 1850 ft from se li.

WICHITA COUNTY—C. R. Conyers, Electra, G. L. Woodard, 80, 1, S 288, Wag. Col. sur, 1170 ft from w and 450 ft from s line. J. H. Martin, Wichita Falls, J. V. Taylor, 21, 1, B 35, WVFL sur, 330 ft from s and w li.

WINKLER COUNTY—Lion O&R Co., El-Dorado, T. G. Hendrick, A, 160, 4, S 41, B B5, 330 ft from n and 990 ft from e li sw¼.

WILBARGER COUNTY — Queen Oil Co., Wichita Falls, Harrold, 267, 15, S 25, B 13, H&TC sur, 440 ft from w and 160 ft from s line.

YOUNG COUNTY — F. P. Hynes, Olney, A. C. Casey, 60, 1, 1905, TE&L sur, 1282 ft from n and 1552 ft from e li sur. Texas Co., Wichita Falls, N. Finch, A, 80, 4, 40, TE&L sur, 150 ft from w and 159 ft from s li. Kleiner & Riggs, Graham, J. F. Larimore, 80, 7, 2246, TE&L sur, 450 ft from e and 1050 ft from s li; 6, 150 ft from w and 1050 ft from s li. P. F. Gwynn et al, Wichita Falls, J. K. Jeffrey, 60, 4, 42, TE&L sur, 450 ft from s and w li. Jacob O&G Co., Gramah, N. Finch, 6, 1, 32, TE&L sur, 606 ft from w and 303 ft from s li. Floyd Ard, Jr., Wichita Falls, J. J. Perkins, 20, 1, 21, TE&L sur, 150 ft from n and w li. S. R. Jeffrey, 40, 1, 41, TE&L sur, 150 ft from w and 450 ft from n li. McDonald Campbell et al, Dallas, C. D. Leberman, 60, 1, 271, TE&L sur, 150 ft w and 1200 ft from s line. W. C. Young, Archer City, Thomas, 60, 1, 227, TE&L sur, 150 ft from s and e li of se¼.

ZAPATA COUNTY—Nordan & Morris, Laredo, C. Bustamente, 193, 1, No. 33, Fansler-Comitas sur, 450 ft from nw and 600 ft from ne line.

Wildcat Reports From All Sections

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CRANE COUNTY—		
Cranfill Bros. Oil Co. & Gulf Prod. Co., J. T. Muir 1	*	4457
IRION COUNTY—		
Brazelton Bros.-Williams & Webb, Williams 1	*	1502

ANDREWS COUNTY—Deep Rock Oil Co. et al's Kuykendall 1, elev 3217 ft, top anhydrite 1678 ft, salt 1720-2810 ft, flowed 200 bbls fluid 12 hrs after shot 600 qts, pb from 4648 to 4565 ft.

BORDEN COUNTY—Geo. Goodrum et al's Mrs. E. M. Conrad 1, dr 475 ft.

BREWSTER COUNTY—Trans-Pecos O&G Co.'s Jones 1, elev 3073 ft, sd 2800 ft.

COCHRAN COUNTY—Continental Oil Co.'s Slaughter 1-B, elev 3809 ft, top brown lime 4070 ft, show oil in lime 4784-93 ft, coring black lime 4812 ft. Penn Oil Co. & Kiskadden's Slaughter 1, lcn.

COKE COUNTY—Reid-Hitchins & Stanolind O&G Co.'s Duncan 1, sp and sd.

CONCHO COUNTY—W. I. Betts & Dennis' Wood-Hendrick 1, sp and sd. W. C. Beesley et al's Sam Waring 1, sd 267 ft. A. W. Turner-Cromwell & Wesner's Brosig 1, elev 1699 ft, sd 1885 ft.

CRANE COUNTY—Continental Oil Co. & Frank Zoch's Cowden 2-B, top salt 680 ft, dr 2110 ft. Cranfill Bros. Oil Co. & Gulf Prod. Co.'s J. B. Tubb 1, elev 2526 ft, salt 505 to 1400 ft, top brown lime 1410 ft, top white lime 2455 ft, flowing 300 bbls fluid, 85 per cent water, dr hard gray lime 5216 ft. H. H. Sides et al's B. P. Nolen 1, sp.

CULBERSON COUNTY—Cranfill Bros. Oil Co.'s Seay 1, dr 1785 ft. W. L. Kornrumpf et al's W. D. Garren 1, dr 1245 ft.

DAWSON COUNTY—R. A. Albaugh et al's Robinson 1, sp and sd.

ECTOR COUNTY—Galt-Brown Co. & Penn Oil Co.'s Cowden 1, dr 375 ft. Southern Crude Oil Pur. Co.'s Cowden 2, elev 3965 ft, top anhydrite 1782 ft, salt 1872-2805 ft, dr 3965 ft.

EDWARDS COUNTY—Phillips Pet. Co.'s Holman 2, elev 2274 ft, dr 7890 ft.

EL PASO COUNTY—Tri-State Oil Co.'s Bobadella 1, sd 540 ft.

FISHER COUNTY—Cranfill-Reynolds Co.'s Flannigan 2, ur 3340 ft. Roeser-Pendleton, Inc.'s Gribble 1, elev 1864 ft, dr 2825 ft. Texas Unity Oil Co.'s First Nat'l Bank 1, dr 1160 ft.

GARZA COUNTY—Penny & Porsey's Justice 1, dr 845 ft.

GAINES COUNTY — Texas Consolidated Oil Co. & TP Coal & Oil Co.'s E. H. Jones 1, elev 3636 ft, top anhydrite 2120 ft, top salt 2225 ft, dr 3165 ft.

TOM GREEN COUNTY—Phillips Pet. Co.'s Gulden-Jennings 1, elev 2016 ft, sd 5050 ft.

HOWARD COUNTY—Continental Oil Co. & Group One Oil Corp.'s E. E. Brinkley 1, top salt 1170 ft, dr 1385 ft. Greene Prod. Co.'s Denman 1, sp and sd.

HUDSPETH COUNTY—R. G. Patillo & Ed. Welch's K. S. Briggs 1, dr 215 ft.

IRION COUNTY—Chas. Denny & W. R. Andrews' Tankersley 1, elev 2207 ft, testing oil prod at 1365½-72½ ft. Stanolind O&G Co.'s W. H. Williams 1, elev 2544 ft, dr 2650 ft. Straughn et al's Tankersley 1, elev 2306 ft, pb from 1506 to 1220 ft.

JONES COUNTY—Bons-Trout-C. C. Julian & Gulf's M. J. Williams 1, elev 1898 ft, sd after shot, td 2581 ft. Condor Pet. Co.'s Brewer 1, lcn abn. Jake Croft & Tidal Oil Co.'s W. D. Swann 1, lcn. Ewmo Oil Corp.'s Hoyt 1, dr 1220 ft. Hardly Able Oil Co.'s Butler 1, dr 1495 ft. C. C. Julian O&R Co.'s T. E. Sears 1, lcn. J. B. Jameson et al's King 1-A, dr 565 ft. Shaheen Oil Co. et al's J. T. Chittum 1, sd with 1850 ft oil in hole at 1972-75 ft, td 2933 ft. Ungren & Frazier's King 1, dr 1015 ft. Sam C. Yingling et al's E. D. Coates 1, sp; J. A. Williams 1, ur 1535 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr — straight raming; std—standardizing; sw — salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

LOVING COUNTY—The California Co.'s J. G. Allen 2, elev 2742 ft, top salt 830 ft, dr 3890 ft; Allen 3, dr 590 ft; Allen 4, rig. Erwin & Mohres' McGinley Corp. 1, rig; J. F. McKenzie 1, lcn. Folbre & Evans' D. P. Dean 1, sd 1385 ft. Grisham-Hunter Corp.'s Dean 1, dr 1160 ft. Henshaw et al's Reagan 2, rig. Pete Hoffman et al's Ramsey 1, top salt 760 ft, dr 1710 ft; Ramsey 2, rig. Lewis & Slagel Drlg. Co.'s Cartwright-Henderson 1, elev 2901 ft, salt 585-2907 ft, sd 2915 ft. C. H. Lockhart et al's F. W. Hubbard 1, top salt 715 ft, top Delaware 4175 ft, td 4220 ft and pb to 4217 ft and shot 180 qts at 4175-4217 ft and swab 200 bbls fluid 80 per cent water. Lockhart & Co.'s Hubbard 6, rig abn. Rush-Anderson & Moor's Wheat 1, lcn. F. S. Tennant et al's Roy Martin 1, rig. West Texas Pet. Corp. (Eppenauer's) J. G. Allen 2, top salt 810 ft, dr by junk 3408 ft; Salisbury 1, top salt 890 ft, dr 3145 ft.

MENARD COUNTY—L. G. Priest et al's Sorrell 1, elev 2279 ft, fsh 2695 ft. Voss & Bryan's Brandenberger 1, dr 470 ft.

PECOS COUNTY—Charlesworth-Messenger Oil Co.'s Butz 1, elev 2519 ft, sd 1290 ft. Disney & Gholson's Wilson 1, lcn abn. Dittman et al's Jackson 1, dry and abn 1596 ft. Magnolia Pet. Co.'s Eaton 1, elev 2426 ft, top salt 966 ft, dr 1465 ft. J. R. Miller et al's Bennett 1, sd 2285 ft. McCarty Oil Co.'s Gray 3, sd 1437 ft. Penn Oil Co.'s J. B. Alvis 1, elev 3493 ft, dr 2470 ft. O. J. Perren et al's Eaton 2, elev 2437 ft, dr by tools 1765 ft. Pure Oil Co.'s Harrison 1, elev 3495 ft, top Delaware 4265 ft, sd 5000 ft. Riser & White (now Cosby Prod. & Roy. Co.'s) Riser 1, sd 500 ft. W. F. Whittaker et al's M. A. Devlin 1, rig.

REAGAN COUNTY—Group One Oil Corp.'s University 2-B, (dd), dr 8335 ft. Big Lake Oil Co.'s University 1-C (dd), dr 8725 ft.

REEVES COUNTY—The California Co.'s Kloh 2, dr 1425 ft. Lee O. White et al's Mrs. Hersheusen 1, co 4415 ft.

RUNNELS COUNTY—Chas. Dutton et al's Dean 1, sd 2335 ft.

SCHLEICHER COUNTY—Eastland Oil Co. Unit Plan's Tisdale 1, elev 2295 ft, co 1680 ft. Paul Teas & Walter Gant's Allison 1, elev 2311 ft, sd 5006 ft. J. D. Wesner et al's Ratcliff 1, elev 2408 ft, ur 1180 ft.

SCURRY COUNTY—R. B. Pender O&G Co.'s Davis 1, elev 2208 ft, top salt 445 ft, fsh 5003 ft. Scurry County Oil Exchange's Earnest 1, lcn abn. Seifert & Dibble's Blackburn 1, top salt 720 ft, dr 2655 ft.

STERLING COUNTY—W. C. Beesley et al's W. L. Foster 1-A, elev 2518 ft, ur 680 ft.

TAYLOR COUNTY — Adams-Ferguson & Hobbs' Lowe 3, elev 1918 ft, sd 1970 ft. J. B. Jameson et al's Webb 1, elev 1905 ft, dr 6320 ft. Sanger et al's Abilene Water Works 1, elev 1759 ft, sd 2785 ft.

TERRELL COUNTY — Mid-Kansas O&G Co.'s M. H. Goode 1, elev 2405 ft, making dry gas, dr 5945 ft. L. Jones et al (was Wooley & Jones') Pankenham 1, elev 2607 ft, dr 720 ft.

VAL VERDE COUNTY—O. O. Owens et al's Mills 1, elev 2130 ft, sd 6780 ft.

UPTON COUNTY—Bennett Oil Co. & P. H. Williams' Shirk 1-A, elev 3106 ft, top lime 2510 ft, co with 800 ft oil in hole at 2660-2727 ft. C. C. Duffey et al's McClintic 4, dr 960 ft. Gulf Prod. Co.'s McElroy 91, elev 2695 ft, top lime 2670 ft, comp flow and swab 522 bbls after shot 355 qts 2790-2970 ft; McElroy 92, dr 2275 ft; McElroy 93, rig. Mintex Oil Co.'s Lane 1, sp and sd. B. F. Weekley Oil Corp. et al's McClintic 2, rig.

WARD COUNTY—Alpine Oil & Dev. Co.'s Boogher 3, dr 670 ft. Beckley et al's Johnson 1, sp. Bell & Wier's Boogher 1, sd 245 ft; Boogher-Cummings 1, dr 770 ft. Buster Black et al's Hall-Roberts 1, lcn. Alex Bradford et al's B. Carson 1, dr 675 ft. Clyde Bradford et al's Hordage-Wilson 1, lcn. California Co. & Atlantic Oil Prod. Co.'s Gordon 1, elev 2523 ft, top salt 1000 ft, cemt cas 2167 ft. Gibson Bros. et al's Johnson 1, sp. Gulf Prod. Co.'s Hutchings 7, elev 2648 ft, top anhydrite 910 ft, top salt 1162 ft, making 1 mil ft gas 2455 ft, dr 2470 ft; O'Brien 16, elev 2640 ft, top salt 1195 ft, top lime 2330 ft, comp flowing 147 bbls oil 19 hrs at 2577-2670 ft; O'Brien 17, rig. Harkinson et al's A. Emory 1, lcn. J. G. Kugle et al's Chas. Wallis 1, comp swab 75 bbls oil daily, td 2645 ft. Magnolia Pet. Co.'s Atlantic-Sealy 1, elev 2686 ft, top anhydrite 1505 ft, dr 2015 ft. R. F. Owen et al's Johnson 1, elev 2499 ft, top salt 1600 ft, co 2823 ft. Peck et al's Geo. Merritt 1, rig. Rickford & Fugler's Boogher 1, top salt 790 ft, dr 900 ft. Paul Ryan et al's Allen 1, elev 2391 ft, top salt 800 ft, sd with 1550 ft oil in hole 2180-2244 ft. Shipley Oil Corp.'s Hayzlett 5, top salt 725 ft, sd with 1500 ft oil in hole after shot, td 2507 ft; Monroe 1-A, elev 2655 ft, top salt 2485 ft, fsh 3780 ft. Chester Smith et al's Boogher 1, dr 1100 ft.

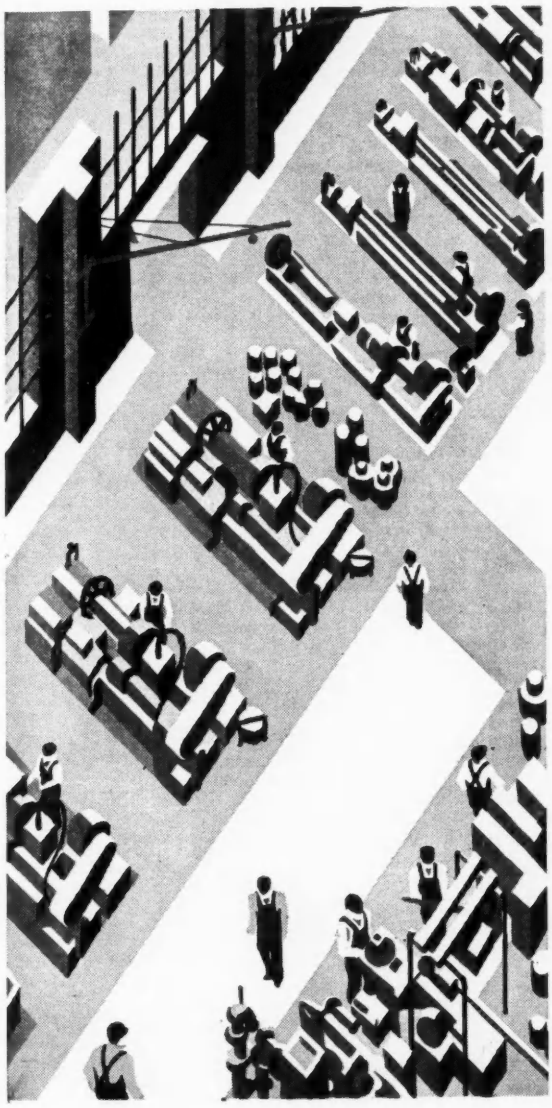
WINKLER COUNTY—Magnolia Pet. Co.'s Bashara 1, elev 2884 ft, top anhydrite 829 ft, top salt 996 ft, top lime 2317 ft, exhausted oil pay, dr 3235 ft; J. B. Walton 1, elev 2931 ft, top salt 1165 ft, top lime 2640 ft, flowed 27½ bbls 31.7 grav ity oil 10 hrs from brown sand 3145-55 ft, with 2 mil ft gas.

SOUTH TEXAS

BASTROP COUNTY—Turner, Wharton & Anderson's J. E. Harris 1, Joshua Gray sur, 3 miles n Dale pool, dr 645 ft.

BEE COUNTY—Alexander et al's McFall 1, 3 miles s Skidmore, spudded. Catlett & O'Neill's Miller 1, Hoskiss sur, 8 miles w Beeville, dr abt 150 ft. Mauldin and Fisher's A. J. Kimball 1, se of Grayburg well, Stephen Winship sur, 7 miles sw Pettus, coring sandy shale 2707 ft. Hicks et al's Billingsley 1, B. Q. Hadley sur, 1 mile ne Grayburg test, sd 2670 ft for water, dr new water well. J. A. Mauldin's Mauldin 1, G. A. Kerr, just southwest of townsite, waiting on casing, total depth 3862 ft, showed 125 lbs. and some gasoline and mud on dst at 3847-54 ft. E. S. Price's Weiss 2, 900 ft sw No. 1, 3½ miles se Pettus, still sd 4552 ft. Rowan and Hope's Mrs. Fannie Goree 1, sec 4, T. B. Barton sur, abn 4007 ft. United Production Co.'s Ray 31, midway between discovery pool and townsite pool, Geo. A. Kerr sur, producing 425 bbls, 260 lbs. pressure, sand 3962-75 ft, cap rock 3961-62 ft, casing set 3691 ft, produced 360 bbls. first 21 hours on ½-inch choke; Ray 32, 3 miles n Pettus main pool in north extension pool, Habbermacher sur, no rept; Ray 33, 700 ft sw No. 31, between main pool and townsite pool, Geo. A. Kerr sur, dk; Ray 35, 100 ft e Ray 34, e extension well, Thos. Hanson sur, spudded; Ray 36, T. Hanson sur, n of e extension wells, dr abt 175 ft.

BEXAR COUNTY—Penn Oil Co.'s Cooksey 1 (wo), Rialls sur, 11 miles e San Antonio, discovery well of new pool, prod 5 bbls daily on pump, casing reset 1375 ft, dr to 1908 ft in chalk, then plugged back to abt 1475 ft, top



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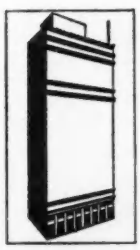

THE SECOND
NATIONAL BANK
MAIN AT RUSK
HOUSTON, TEXAS

of sand 1410 ft. Russell & Moore's A. O. Mills 3, Navarro sur, se of S. A., sd 938 ft. J. Morgan Russell's Price-Story 1, A. Navarro sur, 10 miles s San Antonio on Somerset road, bld steel dk, now move on heavier rig for Edwards lime test, pres total depth 1025 ft. Uechert et al's Palfrey 1, 7 miles se of San Antonio near Brooks field, sd 1710 ft. Weilbacher and Brock's Ernest 1, 2 miles n Somerset, J. Christopher sur, sd 925 ft.

BLANCO COUNTY—Hardy Sitton's Standeford 1 (formerly Adams and Lysles) sur 155, 3½ miles ne Blanco City, dr 952 ft; Hardy Sitton's McMillen 1, 2 miles w Blanco City, Benjamin Williams sur No. 125, dr 786 ft. Meeks et al's Walker 1, ne cor Noel Nixon sur No. 23, 4 miles n Blanco City, pull csg and ream in effort to recover tools, total depth 1025 ft. Forest Oil Co.'s (Rosenfield et al) Hohenberger 1, sur 94, move in larger rig.

BROOKS COUNTY—Ed East's Garcia 3, Las Mastena Y Gonzalene grant, standing 960 ft. Houston Oil Co.'s Wormser Holbein 3, Palo Blanco de Maguellas grant, near Palo Blanco Creek, dr 4017 ft.

CALDWELL COUNTY—J. E. Mills et al's McMahon 1, 6 miles se Lockhart, Pinchback sur, sd, showed some oil at total depth 2185 ft; McMahon 2, 50 ft e of No. 1, Pinchback sur, spudded. Nehaus and Camp's J. B. Moore 1, Wm. Clinton sur, ¾ mile nw Mills test, 6 miles s Lockhart, dr abt 220 ft.

COMAL COUNTY—Caldwell and Lanier's T. J. Byler 1, 10 miles s Blanco City, HE&WT sur No. S-894, running 10-inch csg, caving rept 285-300 ft, total depth 600 ft.

DUVAL COUNTY—Duval Oil Co.'s (Frasher & Schoolfield) Bishop Cattle Co. 2, 990 ft e and 1338 ft s No. 1, sec 135, S&O pool, completed 1550 bbls, topped sand 2366 ft, cored sand and shale, mostly dry to 2407 ft, saturated sand 2407-12 ft, casing set 2318 ft, flowed 800 bbls first 12 hrs, reduced to 600 bbls daily into tanks. Humble O&R Co.'s Kohler 50, sur 164, Kohler pool, dr 5410 ft. Magnolia Pet. Co.'s Wilson 2, sec 134, 4100 ft s of extension discovery well, dr 2315 ft in shale. O'Byrne et al's Weil Bros. 1, 7 miles sw S&O pool, BS&F sur No. 568, dr 1100 ft. Southern Oil Co.'s King Harper 2, sur 323, lcn. SR&C Oil Co. & Vacuum Oil Co.'s Duval County Land Co. 4, 300 ft w of discovery well, sur 293, set csg 1713 ft on top of sand.

GOLIAD COUNTY—Gibson Oil Co.'s Parks 1 (wo) 5 miles ne Goliad, move on larger rig to work over, show some oil and gas 4320 ft, total depth 5267 ft. Slick Estate's Riedel 1, 1830 ft sw discovery test, W. C. Brown sur, dr 425 ft.

GUADALUPE COUNTY—San Antonio Oil &Royalty Co.'s Dibrell 1, sw of Darst Creek field, sec 6, H&TC sur, lcn. Sun Oil Co.'s Dowdy 1, ¼ mile due south Darst Creek production, Jacob Darst sur, putting on pump, estimated 50 to 75 bbls, set 6⅝ inch casing 2570 ft, top of pay 2587 ft, bottom of hole 2595 ft. Simms Oil Co.'s Manford 5, in Manford pool, dk, no further report.

HAYS COUNTY — J. C. Jones' Rufus A. Byler, John Ingram sur No. 31, n part of county, dr abt 700 ft.

JIM HOGG COUNTY—Magnolia Pet. Co.'s Y. V. Cuellar 1, blk 92, W. A. Dannelly sub, sur 575, share 2, El Peyote Grant, dr 540 ft. Peterman and Minahan's Palacios 1, blk 14, sur 231, 3 miles s and e of Randado pool, rigged up. J. W. Pippin's N. Hinnant 1, blk 11, sur 147, dk. A. J. Koling (formerly J. D. Pulliam's) Jones 1, Holden sur, Diego Hinojosa Grant, Share 5-A, prep to re-drilling, well was temp abn at 2844 ft, but taken over by A. J. Kolling to be completed.

JIM WELLS COUNTY—Blair and Son & Stewart's M. Perez 1, sec 9, blk 16, casing set 2123 ft. Carsill O&G Co.'s McGill 1, Wm. D. Baldwin sur, 3 miles n of Armagosa sur, 6⅝ inch csg set 2682 ft, prep to complete, gas sand 2685-89 ft. Gulf Prod. Co.'s Mr. Shaeffer 2, J. Pointevent sur No. 1, no report. R. H. Ewell's Doering 1, blk 6, Seefeld Farm Lots sub, sand 2118 ft.

KARNES COUNTY — J. Morrisey's Ragsdale, dr around 3050 ft. Karnes County Dev. Co.'s W. J. Hubbard 1, 3 miles w Kenedy, dk up, dr water well.

KENDALL COUNTY—Hardy Sitton's W. B. Garvin 1, D. L. Richardson sur No. 7, 1 mile ne Kendalia, completed fishing job, hole clean and dr resumed, now at 1068 ft.

KERR COUNTY—Evans and Gant's Seiker and Mears 1, sw cor of sec 1605, CCSD& RGNR Ry sur, 2 miles ne Love test, fsh 300 ft. Mimms et al's (formerly Evans and Gant) J. E. Young 1, nw corner sec 28, ne Love test, A. E. Bruce sur, water well completed, to spud shortly.

KINNEY COUNTY—Magnolia Pet. Co.'s Wardlow, plugged 5280 ft.

LA SALLE COUNTY — Fred W. Volz's Coleman 1, blk 15, sur 514 ft, sd 40 ft.

LIVE OAK COUNTY—Houston Oil Co.'s Parr 1-A, John McMillen grant, sw Mt. Lucas pool, spudded; Brown Land & Cottle Co. 4, sw corner M. B. Kivlin sur, dr 5012 ft, casing set 4870 ft; Brown Land and Cattle Co. 3, M. B. Kivlin sur, closed down 5573 ft. Jacob, Buzzini and Pickett's Kay 1, Bridget Faddin sur, 5 miles from Geo. West, abn 4290 ft. Phillips Pet. Co.'s W. W. Goebel 1, n Mineral-Oakville highway, on Refugio school lands, 3 miles ne Oakville, abn 3350 ft. Southern Exploration Company's Ponder 1, BS&SF Sur No. 1, dr 3615 ft.

McMULLEN COUNTY — V. F. Neuhaus and Stanolind O&G Co.'s J. O. Massey 1, ½ mile s Lomo Alto, sec 472, spudded.

NUECES COUNTY—Bess et al's Boorey 1, 2½ miles nw Saxet field, sd abt 3800 ft acct rain, to re-dr. Houston Oil Co.'s Ollie Purl 1-B, blk 7, R. Peters sur No. 2, Agua Dulce pool, prep to make dst of sand at 5530 ft; Morgan 2, Saxet pool, dr plugs, casing set 4095 ft. Saxet O&G Co.'s Dunn 4, Saxet pool, ru; Dunn 7, Saxet pool, sand 4296 ft, dest showed 750 pounds pressure and little oil in 5 minutes. Moody Seagraves Producing Co.'s Sedwick 1, dr 4010 ft in shale. H. H. Weinert's Mohle 1, sec 94, just s of Driscoll townsite, dr 5312 ft.

REAL COUNTY—Evans and Sprinkle et al's Marcus Auld 1, sec 15, blk D, HE&WT Ry. sur, 4 miles ne Love test, dr 3610 ft in lime. Gant and Kilgore and Eastland Oil Co.'s Dan Auld 1, sec 23, CCSD&RGNR Ry. sur, 3 miles sw Love producer, dr 1560 ft in sandy formation. Evans & Sprinkle et al's Haby 1, re dr, now at 1365 ft.

REFUGIO COUNTY — Houston Oil Co.'s Rooke 1-B, 2 miles sw Refugio, ½ mile w production, dr 6545 ft; Rooke 14 (wo) 3 miles w Refugio in old gas area, s Smith-Rogers 1, dr 5110 ft. Moody Seagraves Prod. Co.'s E. St. Johns 1-B (T. P. Morgan) s of Refugio, completed 70 bbls, 5478 ft. Morgan & Rutherford's Rogers Heirs 1, ¼ mile n Smith Rogers producers, 3 miles w Refugio, sd 3684 ft. L. L. Smith's Rogers Heirs 2, 3 miles w Refugio, offset to No. 1, sd 5110 ft.

SAN PATRICIO COUNTY — United Production Co.'s Cage 3, White Point, dr 1200 ft.

STARR COUNTY — Kush and Duerkson's Kelsey Bass 1, blk 9, sub of Porcion 75-76-77, Jurisdiction of Camargo, sd 856 ft. Los Olmos Oil Co.'s Kelsey Bass 2, blk 6, sub of Porcion 75, 76, 77, Jurisdiction of Camargo, sd 881 ft. Sacremento O&G Co.'s Seabury et al 1, sd 349 ft.

VICTORIA COUNTY—Lion Oil Refining Co.'s McFadden 3-A, Maria J. Traviesa grant, dk. The Texas Co.'s McFadden 3, w of No. 2 wild gasser, dk. United Production Co.'s McFadden 1-B, near Guadalupe river, 5700 ft e and n of McFadden 2 of Lion, dr 2840 ft.

WEBB COUNTY—Cole Pet. Co.'s Benavides 4, sur 1601, dk; Benavides 3, sur 1613, abn 1578 ft. O. W. Killam's Killam 1, sur 1617, dr 2368 ft; Cuellar 4, share 4, Cuellar Grant, dr 2601 ft, rock. Geo. S. Marshall's C. W. Webster 3, sur 684, Carolina-Texas pool, sd 4000 ft. Carolina-Texas O&G Co.'s Barnsley 9, blk 13, sur 268, ru. South Texas Prod. Co.'s S. Benavides 4, blk 320, Myrtle Hale sub, Mariano Arispe Grant, dr 100 ft.

ZAPATA COUNTY—Allied O&G Co.'s Gutierrez 12, share 4, Fansler Partition, Comitas Grant, sd 100 ft. Benson Oil Co.'s S. Vela 1, blk 12, sur 259, dr 480 ft. Brooklyn Oil Co.'s Cuellar 1, sur 119, abn 1862 ft. Claypool and Nickson's Garza 3, blk 11, sub of Zorro ranch, Comitas Grant, completed 175 bbls at 1398-1405 ft, casing set 1392 ft. W. T. (Bill) Henry et al's Gopher Trust Estate 1, blk 10, sur 4, Fullerton sub of Share 8, Borrego grant, dr 160 ft. K. & P. Oil Co.'s A. Bustamente 4, blk 6, share 5, Fansler Partition, Comitas Grant, dr 1615 ft. O. W. Killam's Cuellar 40-C, sur 278, Cuellar pool, dk; Killam 4, sur 182, blk 11, Mirando Valley pool, dr 2754 ft. A. R. McLennan's Cuellar 2, sur 277, completed for 100,000 cu ft gas in sand 1555 ft to 1566 ft, total depth 1735 ft. Mid West Public Utilities Co.'s M. P. de Garza 1, blk 33, Pedernal Grant, sd 1580 ft. P. H. Meyers' I. G. Trevino 1, blk 24, sur 412, sd 900 ft. National Oil Co. of Texas' Luther et al 1, blk 97, Da Pron sub, ne 1-a Porcion 6, dr 300 ft. Neilson and Coursey's Luther et al 1, blk 11, sec 5, Fullerton sub, Share 8, Borrego Grant, sand 1145 ft, testing. J. I. Newton's I. G. Trevino 3, blk 7, sur 66, lcn. Nordan and Morris's Concepcion Bustamente 1, share 33, Fransler Partition, Comitas Grant, dr 1414 ft, sand 1330 ft showed little oil and gas. B. F. Nixon's A. Gutierrez 1, lot 5, blk 8, Partition 10, Borrego Grant, sd 37 ft. John Pappas Pool, Inc.'s, Flores 1, 6000 ft from Rio Grande, Porcion 35, dk. Penny Prod. Co.'s Juan V. Cuellar et al 1, blk 1, sur 2, Pappas sub, Porcion 33 and 34, dr 2050 ft, showed sw and gas in sand 1984-87 ft. S. T. Phelps, Trustee, (Blankenship) Garza 2, blk 2, sur 412, dr 1837 ft. Shankle & Murray's F. Cuellar 1, blk 6, sur 61, Muckelroy pool, completed for 40,000,000 cubic ft gas, 670 pounds pressure, sand 1678-84 ft, casing set 1675 ft. W. R. Shankle's Garza 2, blk 10, sub of Zorro ranch, Comitas Grant, completed 12 bbls, 1401-10 ft. S. R. & C. Oil Co.'s Montemayor 5-D, blk 8, sur 64, sand 1300-18 ft, tested sw and oil, continue to test. F. A. Talmadge & G. Mackenzie's G. F. Trevino 1, blk 6, sur 4, Marts and Beavens sub of Porcion 2 and 3, dr 700 ft. T. H. Ward's Uribe 1, blk 8, sub of share 7, partition 6, Trinidad-Uribe Partition of Juan V. Borrego Grant, rigged up and standing.

ZAVALLA COUNTY—Texas Gas Utilities Co.'s Ike Pryor 4, 1000 ft nw Pryor 3, Pryor pool, ru.

— — — — — — — — — CUT OUT AND MAIL — — — — — — — — —

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CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
GREGG COUNTY—		
S. F. Hurlburt & Burton, A. J. Page 1	*	3679
UPSHUR COUNTY—		
McGinley Corp., Reeves-Merritt 1 ..	*	4004

BOWIE COUNTY — Maud Redwater Oil Co.'s Merritt 1, Y. S. McKinney sur, sd 635 ft. Lee Timberlake et al's Tidwell 2, L. M. Rice sur, elev 290 ft, sd 720 ft.

CASS COUNTY—S. D. Hunter et al's M. Felker (66-ac) 1, J. L. Chambers sur, elev 248 ft, dr 355 ft. C. E. Murdock et al's G. W. Coody-First Nat'l Bank 1, Evans Watson sur, elev 401 ft, sd 1500 ft. Olds-Smith et al's Joe Athney 1, J. C. Byers sur, sd 1600 ft. John C. Rogers et al's W. Q. Henderson 1, Wm. Davis sur, elev 354 ft, coring 905 ft; Lanier 1, K. A. Welborn sur, elev 366 ft, cem cas 1920 ft. Smith-Adkinson et al's Wilson 1, Jas. Graham sur, dk. J. E. Smitherman et al's A. S. Fell 1, John Farrell sur, elev 295 ft, top Pecan chalk 2405 ft, water sand 3142-55 ft, dr 3165 ft.

CHEROKEE COUNTY—D. Harold Byrd et al's Fariss 1, elev 215 ft, sd 2900 ft. W. G. Gray et al's H. Kyle 1, Jas. McClain sur, lcn. McDonald Bros. et al's W. A. Newton 1, Thos. Quevedo sur, elev 709 ft. Rowan-Nichols Oil Co.'s Ousley 1, T. L. Smith sur, rig.

DELTA COUNTY—Delta Development Co.'s Hays-Netherly 2, dr 2355 ft. Everett Drlg. Co. et al's M. Sansing 1, J. B. Craig sur, dr 3315 ft. D. S. Hoad et al's J. J. Baker 1, R. Carson sur, elev 437 ft, sd 1550 ft. Worthington-Stedham et al's W. H. Dejernett 1, E. Chick sur, elev 492 ft, sd 1925 ft.

FRANKLIN COUNTY—Harper-Byers Oil Co.'s A. J. Laws 1, D. G. Rogers sur, dr 2900 ft.

LAMAR COUNTY—K. O. Bundy et al's G. S. Legate 1, J. V. Cheney sur, rig. Everett & Allen's J. A. Guest 1, Luke Roberts sur, dr 2170 ft. Puritan Oil Co.'s Geo. Parr 1, R. Russell sur, dk.

LEON COUNTY—Sun Oil Co.'s Ella Grayson 1, Marquette Blk., dr sandy-shale 2440 ft.

LIMESTONE COUNTY—R. H. Dearing & Sons & Imperator Oil Corp.'s B. B. Baron 1, E. Mabry sur, Pecan chalk 1622-1817 ft, base Austin chalk 2761 ft, dr 2925 ft. E. E. O'Byrne et al's S. W. Hancock 1, H. York sur, sd 1165 ft.

RAINS COUNTY—Rains County Oil Corp. (R. A. Westbrook's) Wm. Cates 1, Calvin Gage sur, dr 1960 ft.

RED RIVER COUNTY—E. L. Chapman et al's Morris-Guest 1, S. Larkin sur, sd 2745 ft. Droppleman & Bundy's J. W. Cunningham 1, S. V. Chi sur, sd 2745 ft. Echols & Peters' E. Howison 1, W. Humphries sur, dk. Everett & Allen's W. F. Bryan 1, P. Vaughan sur, dk. Pierson et al's J. R. Dellahunty 1, sp and sd. Johnson Pet. Co.'s Style 1, Dean sur, sd 2290 ft.

ROCKWALL COUNTY—A. W. Walker & Son et al's M. S. Jones 1, S. Simmons sur, sd 700 ft; Paul Snow 1, J. E. Sherwood sur, sd 926 ft.

RUSK COUNTY—Dan Brooks et al's Alford 1, J. D. Reel sur, rig. Caroyln Oil Corp.'s E. C. Carey 1, John Piburn sur, lcn. Devonian Oil Co. & Gulf Prod. Co.'s R. A. Motley 1, Wm. Killen sur, rig. Daniel & Tom C. Patten's Mercer-Crews 1, M. A. Young sur, rig. R. W. Giles (Shreveport Prod. Co.'s) Newt Orr 1, Wm. Tippett sur, dk. J. Griffith et al's F. J. Lowe 1, Wm. Williams sur, rig. J. S. Kimbrough et al's Wetherly 1, J. I. Sanchen sur, rig. Laster Oil Co. & Miller's B. B. Gray 1, Jas. McLean sur, dk. Leonard Pet. Co.'s Adams 1, S. C. George sur, Pecan chalk 2135-2730 ft, dr 2800 ft. Moss et al's Hamp Matthews 1, elev 387 ft, sd 2710 ft. Pearl Oil Co. (Paul Vitek's) Eaton 1, F. Cordova sur, Pecan 2714 to 3090 ft, dr 3375 ft. Rusk County Oil Co.'s Robertson 1-A, skid rig. Nat Sadler et al's Ed. Sparks 1, Abner Nail sur, dr 980 ft. Ward Oil Corp.-J. R. Elliott & Ralph A. Johnson's Pecan chalk 2764 to 3090 ft, dr 3250 ft.

SMITH COUNTY—Big Indian Oil & Dev. Co.'s C. Mills 1, Jas. Jordan sur, elev 420 ft, rig. J. B. Bunte et al's Jarvis 1, Juan Vargas sur, rig. Howard Pet. Co.'s Lee Holt 1, Barnes Clark sur, dk. C. M. Joiner et al's W. M. Wright 1, (4 mi e Tyler), dr 1735 ft. Guy Lewis et al's Cook-Green 1, Jas. Jordan sur, Pecan chalk 2736-3103 ft, Austin chalk 3535-3620 ft, cem cas on oil sand at 3675-3676 ft. Owen-Sloan Oil Co.'s M. Starnes 1, Sam Epps sur, dk. T. B. Slick Est. & J. G. Kugle, Jr. et al's M. Freeman 1, A. J. Lagrone sur, elev 498 ft, Pecan chalk 3080-3275 ft, sd in Austin chalk 3623 ft.

UPSHUR COUNTY—Dr. F. F. Beeler et al's R. H. McClelland 1, H. P. Torres sur, dk. Breman & Woods' Robertson 1, J. Stephenson sur, rig. Tip DeArmand-Capps et al's Chas. Cobb 1, Marshall Mann sur, elev 428 ft, Pecan chalk 2590-3118 ft, top Austin chalk 3738 ft and oil sand 3771-81 ft. J. W. McCullough et al's John Copeland 1, Marshall Mann sur, lcn. McGinley Corp.'s Reeves-Merritt 1, L. B. Brown sur, elev 358 ft, Pecan chalk 2570-2930 ft, Austin chalk 3487-3523 ft, dry and abn in Woodbine 4004 ft. Penn Oil Co. et al's O. B. Gage 1, J. B. Davenport sur, rig. E. R. Perkins et al's Kay 1, T. J. Elliott sur, rig.

VAN ZANDT COUNTY—J. C. Fore & Geo. L. Pace et al's P. S. Hand 1, Wm. Sherman sur, elev 564 ft, Pecan chalk 2420-2444 ft, Austin chalk 3452-3893 ft, fsh 5160 ft. Kelly O&G Co.'s Lunsford 1, J. Conner sur, sd 2300 ft. Neil McElroy et al's R. W. Murphy 1, H. Bailey sur, sp and sd. Texas Chief Oil & Roy. Corp.'s Foster 1-A, F. Montgomery sur, materials. Van Oil Assn's J. C. Tankersley 1, L. Landers sur, sd 2000 ft. Wilson et al's Stribling 1, M. B. Fisher sur, sd 2200 ft.

VAN FIELD—Helms et al's C. E. Bogue 1, Marshall University sur, elev 461 ft, sd 3098 ft. Pure Oil Co.'s J. A. Bracken 3, rig; R. E. Cade 3, cem cas 2815 ft; B. E. Crim (40-ac) 2, dr 2665 ft; Davis 1, dk; H. C. Gilbert (62-ac) 2, sp; J. T. Jarman 7, cem cas 2807 ft; A. F. Magers 2, dr 1830 ft; B. F. Smith 5, rig; W. F. Swanson (20-ac) 4, dk; J. T. Thompson (50¾-ac) 10, dr 2555 ft; A. R. Tunnell (101.2-ac) 6, dr 2470 ft; R. L. Wells 5, dk; Ella York (39.6-ac) 3, sd 2455 ft; Ella York (41.1-ac) 4, testing prod 2925 ft; Ella York 5, dr 1950 ft.

WOOD COUNTY—Wood County Dev. Co.'s M. M. Rick 1, Daniel Fuller sur, dr 1410 ft.

EAST TEXAS

HARRISON COUNTY — Hunter et al's Daugherty 2, W. B. Burris sur, 12½ cas 245 ft, ta in Georgetown 3563 ft. Karona Pet. Co.'s A. J. Bohler 1, S. F. Sparks sur, elev 310 ft, top Nacatosh 1437 ft, dr 1770 ft. O. H. Parkening's T. J. Taylor 1, Walter H. Payne sur, rig; T. J. Taylor 2, J. C. Hawley sur, dk. Rowan & Nichols' Henry Pitts 1, E. A. Merchant sur, lcn. W. H. Hobson, Tr.'s, Taylor 1, Henry Vardeman sur, elev 284 ft, 12½ cas 355 ft, top chalk 2095 ft, sd in chalk 2160 ft. Crump & Hannagan's Dunn 1, Bettie Humphries sur, dry 3506-57 ft, coring 3575 ft. W. G. Ray Drilling Co.'s Hall 1, D. Davis sur, 10-inch cas 173 ft, sd in shale 2000 ft. Siegel Bros. et al's T. J. Taylor 1, F. O'Neal sur, lcn. Sinclair O&G Co.'s Davenport 1, J. V. Morton sur, sp dr 100 ft.

MARION COUNTY—Trammell et al's Hussey 1, Chas. Lockhart sur, elev 282 ft, top chalk 1771 ft, 8¼-inch cas 1514 ft, junk in hole, ta 1878 ft. Rondeau & Hindman's McGaugherty 1, W. J. Willis sur, sd 2450 ft. Hindman et al's Lindsey 1, Alex Albright sur, sd 400 ft. Shasta Oil Co.'s Johnson 1, Wm. Mason sur, dr 60 ft. Eden Oil Co.'s Deware 1, R. Hazelwood sur, rig. Sinclair O&G Co.'s Wurtsbaugh 1, C. S. White sur, rig. Wright-Braden 1, Jacob Grover sur, sp. Claunch et al's Laun 1, Henry Fugham sur, dk.

PANOLA COUNTY—Knott et al's Marion Durham 1, Chas. Haley sur, 6⅝ cas 2670 ft; pulling 5 3/16 cas at 2977 ft, showed 50,000 cu. ft gas much sw at 2998 ft, td 3190 ft. Smith et al's Hunt 1, Albert Johnson sur, dk. Bell et al's Burnett Lbr. Co. 1, S. B. Hendrick sur, elev 186 ft, bit recovered, sd in lime 3310 ft. Warren & Dawes' McNeese 1, A. Booker sur, dk. Dillon & Bradham's Baldwin 1, Hampton West sur, 12½ cas 43 ft, dr shale 1217 ft. United Prod. Corp.'s Steele 17, B. C. Jordan sur, lcn (Trinity test). Neff et al's Brumble 6, B. C. Jordan sur, dk (Trinity test). Daisy O&G Co.'s Rucks Hrs. 1, Jno. Palmer sur, 12½ cas 780 ft, top chalk 1352 ft, 8¼ cas 1900 ft, sd 2600 ft. Ark. La. P. L. Co.'s Werner Sawmill 3, B. C. Jordan sur, 12½ cas 142 ft, dr 3400 ft. Everett Prod. Co.'s E. L. McDaniels 1, Alamson Barr sur, first hole junked at 398 ft after gas blowout with 1500 bbls daily fresh water, skidded 200 ft north, sp new hole.

SABINE COUNTY—Loring Oil Co.'s Nona Mills Lbr. Co. 1, Jas. Mason sur, ta 4803 ft.

SHELBY COUNTY — Sloane Prospecting Co.'s T. B. Sandford 1, M. M. Vann sur, rig. Chapparral Oil Co.'s Holt 2, Matthew Moore sur, sd wo rotary, td 3111 ft. I. M. Bradley et al's J. J. Asberry 1, G. W. Mitchell sur, dk. E. L. Chapman's Pickering Lbr. Co. 1, C. F. Henry sur, sp dr 50 ft.

TEXAS GULF COAST

AUSTIN COUNTY—O'Hara et al's Schrader 1, sd 3480 ft. Empire's Kunze 1, San Felipe, dr 6270 ft sand and shale.

BRAZORIA COUNTY—Thos Faust et al's Fee 6, 2 mi s Nash Dome, sd 6220 ft. United Oil Synd's Speer 1, 3 mi n Danbury, dr 1680 ft, sandy shale. Mills Bennett's Randon 2, Allen, stuck dr stem 5308 ft. Freeport Sulphur Co.'s Fee 2001, Bryan Mound, set 6⅝-in cas 5149 sdtr. Layne et al's Wisdom 7-A, Damon Mound, prep to set 8¼-in cas 3650 ft. The Texas Co.'s Ewing 1, Manvill, set 4¾-in cas 7590 ft. Rycade & Amerada's Seaburn 2, Stratton Ridge, dr 7170 ft lime.

BURLESON COUNTY — Mid South Oil Co.'s Duckworth 1, 2 mi e Clay Station, sd 2598 ft.

CALHOUN COUNTY — The Texas Co.'s Smith 1, Chocolate Creek, dr 1960 ft shale.

FORT BEND COUNTY—Gulf's Moore 28, dr 5390 ft shale.

GALVESTON COUNTY — Mars McLean's Cade 20, ru.

GRIMES COUNTY—Wainwright-West Oils, Ltd. & Triangle Corp.'s Templeman 1, sd 4560 ft.

HARDIN COUNTY — Pearce & Proctor's Russell 40, Turnbow sur, lcn. The Texas Co.'s Fee 307, Sour Lake, stdg 3000 ft.

HARRIS COUNTY — Cypress Oil & Dev. Co.'s Kitzman 2, 2 mi n Cypress, t.a. 4430 ft. Ship Channel Oil Corp.'s Jones 19, Whitting sur, lcn. Smith-Hamill Dr. Co.'s Parsons 1, Jones sur, lcn. Tilton & Perot's Fee 1, Pierce Junction, dr 900 ft sand. Humble's Minnetex 5, ru. Kouri & Grayburg Oil Co.'s Bender 1, Pierce Junction, dr 4200 ft sand and shale, slight o.s. Rio Bravo Oil Co.'s GH&SA 102, Pierce Junction, set 6⅝-in cas 4189 ft. Smith et al's Fee 3, Pierce Junction, set 6⅝-in cas 4460 ft Warner-Quinlan's Minchen 2, Pierce Junction, set 30 ft screen 4200 ft.

JEFFERSON COUNTY—Humble's McFadden 1, 8 mi e Big Hill, dr 6090 ft w.s. Keith et al's Reed-Hankamer 1, 3 mi ne Westbury, dr 3970 ft shale. The Texas Co.'s Pipkin 4, Big Hill, dr 4920 ft sand and shale. Yount-Lee's McFadden 145, Humphrey sur, lcn.

LIBERTY COUNTY — Cranfill-Reynolds' Davis 7, Kokernut sur, dr 560 ft rock. Texas Gulf Sulphur Co.'s Carter 3, Moss Bluff, dr 1020 ft gypsum. Hamm et al's Harvard 1, Davis Hill, sd 1000 ft. Gulf's Boyt 12, Hankamer, dr 4320 ft sand; McFadden 3, Moss Bluff, dr 6080 ft sand and shale. Humble's Breeden 2, Moss Bluff, dr 4540 ft shale; Sergent 2, Moss Bluff, prep to set 6⅝-in cas 5820 ft; Sterling 7, Moss Bluff, sl o.s. 5858 ft.

MATAGORDA COUNTY — Cockburn Oil Corp.'s Hawkins 2, Shepherds Moss, flowed s.w. 5170 ft. Empire's Boker 1, Citrus Grove 1, sdtr 5200 ft.

MONTGOMERY COUNTY—Price & Wilhite's Juergus 2, 2 mi of Conroe, sd 3650 ft.

ORANGE COUNTY—Crews Oil Co.'s Mansfield 1, Hill sur, dr 1400 ft shale.

WASHINGTON COUNTY—Yegua Oil Co.'s Graves 1, 3 mi n Independence, ru. Penn-Tex Oil Co.'s Kamas 2, Brenham, dr 1380 ft gumbo. Sun's Caraway 5, Sperry sur, set 7-in cas 1300 ft; Marcus 3, lcn.

LOUISIANA GULF COAST

ACADIA PARISH—Yount-Lee's Houssiere 9, Evangeline, fsh 8666 ft.

ASCENSION PARISH—Gulf's United Land Co. 19, Sorrento, dr 4066 ft sand. Triumph Oil Co.'s Lacey 2, stdg 4225 ft.

AVOYELLES PARISH — M. L. Vincent's Morrow 1, sd 4220 ft.

CALCASIEU PARISH — Wilfred Lahay's

Jardell 1, 2 mi e Vinston, sd 3250 ft. Vacuum's State 7, ru. Union Sulphur Co.'s Moss 2, Lockport, fsh 5170 ft. J. O. Davis' Ind. Lbr. Co. 1, Starks, stdg 6560 ft. Crawford Doyle, Tr.'s, M. Johnson 1, Starks Dome, sd 370 ft. Union Sulphur Co.'s Fee 762, dr 5555 ft shale.

CAMERON PARISH — Freeport Sulphur Co.'s Gulf Land Co. 7, Black Bayou, lcn. Yount-Lee's 8, Black Bayou, abn 1344 ft. Shell's Watkins 16, Black Bayou, tested sw, prep to deepen 4348 ft; State 2, dr 4080 ft sand. The Texas Co.'s State Lake 7, Calcasieu Lake, lcn. Vacuum's Cameron Meadows 2, Cameron Meadows, dr 120 ft shale. Magnolia's Sweet Lake Land Co. 2, Sweet Lake, dr 3470 ft shale. Pure's Yount-Lee 10, Sweet Lake, pulling screen to drill deeper, 6830 ft.

IBERIA PARISH—Jefferson Lake Oil Co.'s Lake Peigneur 10, Jefferson Island, dr 1940 ft lime; Lake Peigneur 11, set 10-inch cas 600 ft. The Texas Co.'s Vermilion Bay 6, Vermilion Bay, dr 4530 ft shale.

IBERVILLE PARISH—Gulf's Gay 1, Bayou Choctau, test showed small amt oil, prep to set screen 4174 ft. Standard of La.'s L. Baist 1, Bayou Blue, w s 2550 ft; Schwing 1-A, dr 5600 ft gumbo; Schwing 3, sd 2980 ft; Wilbert 7, pocket 50 ft; Case 2, Bayou des Glaise, lcn. Texas Gulf Sulphur Co.'s Wilbert 8, Bayou Choctau, dr 1000 ft gumbo; Wilbert 9, lcn.

JEFFERSON DAVIS PARISH—H. T. McCalin et al's Atterbury 1, Welsh, sd 5610 ft. A. V. Peters' Smith 1, Welsh, lcn.

PLAQUEMINES PARISH—Gulf's Burras Levee 2-B, Rose Dome, dr cap rock 2380 ft. Humble's Cockrell-Moran 2, Lake Grande Ecaille, dr 5250 ft sand.

ST. JAMES PARISH — Convent Oil Co.'s Jacobs 1, sdtr 1780 ft.

ST. LANDRY PARISH—The Texas Co.'s Botney Bay Lbr. Co. 9, Port Barre, dr 3160 ft sand.

ST. MARTIN PARISH—Harrison and Abercrombie's Barras 1-A, abn 6696 ft. Humble's Woodward 1, Bayou Bouillon, dr 5750 ft shale; State 4, dr 4560 ft sand.

ST. TAMMANY PARISH—Washington and St. Tammany Drlg. Co.'s Coussack 2, sd 2030 ft.

TANGIAPAHOE PARISH—Joan Dev. Co.'s Lake Superior Oil Co. 1, sd 3016 ft.

TERREBONNE PARISH—La. Gas & Fuel Co.'s Minor Estate 1, Houma, dr 5990 ft shale. The Texas Co.'s Bay St. Elaine 1, Bay St. Elaine, prep to cut 5-inch csg 4750 ft; Bay St. Elaine 6, lcn; Caillou Island 4, ru; Four Isle 5, Four Isle, sp in; Lake Barre 6, Lake Barre, cap pil; Lake Barre 8, set 9⅝-inch cas 5810 ft; Lake Barre 10, lcn; Lake Barre 11, lcn; Lake Barre 12, lcn; Lake Barre 13, lcn; Lake Barre 14, lcn; Lake Pelto State 4, Lake Pelto Dome, abn lcn; Lake Pelto 5, abn lcn.

VERMILION PARISH—Pure's S. W. La. Land Co. 1, dr 6100 ft shale.

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
CONCORDIA PARISH—		
United Pub. Serv. Corp., Saunders 3, 42-8n-10e	¶7	1436
SABINE PARISH (Zwolle)—		
Ohio Oil Co., Bowman-Hicks 6, 2-7-12	30	2509
SABINE PARISH (Ayers)—		
Magnolia Pet. Co., Lucius 1, 2-5n-12w	*	4480

BIENVILLE PARISH—Jamestown Synd.'s Lawhon 1, sw ne 15-16-8w, show gas in sandy shale in Tokio, cemtd 6-inch cas 2845 ft, bailed down 1500 ft, cas parted, going over with nipple, td 2854 ft (corrected S.L.M.).

BOSSIER PARISH—Andrews & Davlins' Nattin 1, 15-22-14, dry 2062-67 ft, dr 2300 ft. H. I. Morgan et al's Kendricks B-13, ne sw 22-19-11, 10-inch 147 ft, blew out est 20 mil ft gas, lost ds in hole, junked hole at 1702 ft, skidded 200 ft north sp new hole, 10-inch 143 ft. Rambaugh et al's Allison 1, 10-19-13, tested dry, sd 1100 ft. R. O. Roy's W. H. Hodges 1, ne ne 19-16-10, 12½ cas 140 ft, dr shale 2410 ft.

CADDO PARISH—United Gas Pub. Serv. Corp.'s Emmons 1, ne sw 27-23-16, 12½ cas 363 ft, 9-inch cas 3635 ft, dr 4602 ft; Fortner 1, nwc frac. sec. 5-22-16, dr 5300 ft. Garry M. Gordon's Hatcher 1, nw ne 11-17-15, lcn (5500 ft test). Pyramid O&G Co.'s Wheeler 1, se sw 9-18-16, 10-inch 450 ft, cemtd 6⅝ cas 2779 ft. Libby et al's Foster 1, 29-15-16, dr 3230 ft. Ralph Davidson et al's F. Weiller 1, 33-17-13, 10-inch 40 ft, dry 1802-1942 ft, base Blossom 1997 ft, dr shale 2211 ft.

CATAHOULA PARISH—National Drilling Co.'s Marsh McMillion 1, 26-9-6e, 6⅝ cas 2796 ft, tested sw 3086 ft, dr 3090 ft.

CALDWELL PARISH — Hudson et al's Burton 1, 36-12-2e, dr 2650 ft. Carter Bell et al's Taylor 1, 42-14-4e, rig.

CLAIBORNE PARISH—Baird Bros. et al's Whittaker 1, 30-20-7w, dr shale 2485 ft.

CONCORDIA PARISH — Fred Stovall's Grasmere 1, 23-8n-10e, 8-inch 152 ft, dry 1025-1100 ft, dr 1440 ft. United Pub. Serv. Corp.'s Saunders 3, 42-8n-10e, 12½ cas 160 ft, 9-inch cas 1400 ft, est 7 mil ft gas 610 pounds rock pressure, td 1436 ft. Joe Marr et al's Maxwell 1, 38-3-8e, sd 3622 ft.

DE SOTO PARISH—W. H. Weichert's H. Smith 1, 31-14-15, top gas sand 1653 ft, top chalk 1901 ft, sd 2350 ft. Neff et al's Ramsey 1, 33-13-16, 12½ cas 80 ft, dry show gas 2816-32 ft, dr 2990 ft. S. A. Guy et al's Dowling Bros. 1, 31-14-14, sd 1354 ft.

NATCHITOCHES PARISH—C. M. Talley et al's Talley 1, 29-11-10, 10-inch 60 ft, dry show oil in bro sand and shale 1256-69 ft, arr deepen. Gulf Ref. Co.'s Bodcaw Lbr. Co. 1, sw ne 13-13-8w, 12½ cas 910 ft, sd in blue shale 4219 ft. W. M. Coates et al's Collins 1, sw nw ne 28-9-10, base Midway chalk 2612 ft, base hd lime 4039 ft, missed ds test in 41 ft, bro formation identified as Woodbine arr core td 4080 ft. J. W. Cooper et al's Cooper 1, 35-11-10, dry in sandy shale 2829-32 ft, sr td 3100 ft. Cooper 2-A, 35-11-10, top chalk 1400 ft, claim show o&g arr ds test td 1515 ft.

RED RIVER PARISH—Lucky Strike Co.'s Chaffraix 1, 33-12-10, tested est 500 bbls sw show oil, 282-0-3010 ft, lost 1800 ft, ds and well pckr in hole sd td 3010 ft.

SABINE PARISH—J. C. Walton's Sabine 1, ne nw 11-7-12, 6⅝ cas 2119 ft, bailing to test td 2327 ft. Lacey Pet. Co.'s Cooper 1, 30-8-11, top chalk 2306 ft, 6⅝ cas 2270 ft, hfo wosr td 2620 ft. Cooper 3, sw ne 30-8-11, rig. Trans-America Oil Co.'s Carter 1, 36-8-12 top marl 2311 ft, 6-in 2211 ft, 700 ft oil hole wo td 2540 ft. Jean Longoria's Belton 1, 31-9-13, dr 1100 ft. Franks et al's Dew 1, 22-8-11, 6-in 2111 ft, top marl 2265 ft, bailed dry 2380 ft, arr deepen. Triangle Pet. Co.'s Sabine 2, 36-8-12, dk pat. D. M. Lide's Ponder 1, 15-7-11, top marl 2393 ft, top chalk 2407 ft 6-in 2385 ft, hfo wosr td 2800 ft. Ponder 2, ne nw 15-7-11, 10-in cas 102 ft 6⅝ cas 2364 ft show oil 2420 ft arr deepen. Jno. Woodley's Sabine 1, ne se 12-8-12, 10-in 103 6⅝ cas 2310 ft. H. W. Perritt's Bowman-Hicks 3, 2-7-12, 6⅝ cas 2206 ft, bailing showing o&g td 2293 ft. Bowman-Hicks 4, se ne 2-7-12, lcn. Boring 1, se nw 11-7-12, dk pat. A. H. Thomas' Edwards Est. 1, ne se 8-8-13, lcn. R. L. Gay, Tr.'s Long-Bell Lbr. Co. A-1, ne nw 10-8-13, dk pat. Jordan & Co. Inc.'s La. Long Leaf 1, sw se 3-7-11, lcn. Magnolia Pet. Co.'s Lucius 1, nw ne 2-5n-12w 13 3/8 cas 204 ft, show oil 2595-99 ft, base hard lime 4060 ft, dry abn in lime rock td 4480 ft. Gautier et al's Meshell 1, se nw 30-8-12, sp new hole dr 90 ft. Ohio Oil Co.'s Bowman-Hicks 6, se nw 2-7-12, 10-in cas 203 ft, 6⅝ cas 2000 ft, pumping 30 bbls oil day td 2509 ft. Bowman-Hicks 7, ne ne 2-7-12, 10-in 100 ft 6⅝ cas 2215 ft. Bowman-Hicks 8, nw ne 2-7-12, lcn. Bowman-Hicks 9, nw se 35-8-12, lcn. Bowman-Hicks 10, sw ne 35-8-12, lcn. Bowman-Hicks 11, sw ne 2-7-12, lcn. Durham Oil Co.'s Polly 1, sw ne 18-8-12, 10-in 105 ft, 8¼ cas 2087 ft, dr 2285 ft. Packard Oil Co.'s Davis 1, sw sw 8-7-10, 10-in cas 80 ft, dr sandy shale 2442 ft. Merritt, Tr.'s Byrd 1, se nw 1-7-11, cmtd 6⅝ cas 2390 ft, td 2415 ft. W. M. Coates' Sabine 2, 2-7-12, 10-in 100 ft, cemtd 6⅝ cas at top marl 2207 ft. Sabine 3, 1-7-12, rig. Loring Oil Co.'s Bowman-Hicks 16, nw nw 9-7-12, lcn abn will not drill had been planned as 6000-7000 ft test.

TENSAS PARISH—Seip et al's Fowler 1, 10-10-10e, sd 905 ft. A. R. Willis' Curry 1, 39-11-12, dr 3198 ft.

VERNON PARISH — Smith, Weir et al's Delta L&T Co. 1, ne ne 14-2n-11w, rig.

WEBSTER PARISH—D. M. Coyle's Frazier 1, ne se 27-23-11, dk. Cassidy & Davis' Nickerson 1, ne sw 29-23-10, sd 160 ft. Red Hawk Oil Co.'s Matthews 1, se nw 11-23-9, dr 1500 ft.

OKLAHOMA

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros.' Forbes 1, ne c se nw nw, sd 1420 ft.

KAY COUNTY—T 27n, R 2e, Sec. 9, Mummer et al's Sornick 1, nw c se, hfw 2070-2170 ft sd 2700 ft. T 26n, R 1w, Sec. 32, Boucher et al's Jefferson 1, ne c sw, dr 3482 ft.

HARPER COUNTY—T 25n, R 20w, Sec. 12, Empire's Bruce 1, sw c ne ne sw, td 7935 ft pb 7500 ft will shoot.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden's Collmer 2, ne c se ne sw, lost tools 5640 ft sd.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, J. V. Bailey et al's Acre 1, c sw ne, show gas 5298-5303 ft, dr 5310 ft.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse, Beamer et al's White 1, se c nw, td 5850 ft sd.

NOBLE COUNTY—T 21n, R 1e, Sec. 12, Barnsdall et al's Miksch 1, nw c sw, hfw 4923-26 ft td will abandon.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Washoma Pet. Co.'s Phillips 1, c nw sw, hfw 4535-37 ft dr 4600 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Healy et al's Quier 1, se c sw sd 3970 ft.

KAY COUNTY—T 28n, R 3e, Sec. 24, Summitt Drlg. Co.'s Hays 1, nw ne nw, sd 1950 ft.

OSAGE COUNTY—T 27n, R 7e, Sec. 4, L. G. Stanley et al 1, se c sw sd 1900 ft.

PAWNEE COUNTY—T 23n, R 5e, Sec. 15, Cochran et al's McFadden 1, ne c sw, rig. T 22n, R 5e, Sec. 2, Sherry et al's Milsap 1, se c sw sd 1750 ft. T 20n, R 5e, Sec. 6, W. A. Rookstool's Berry 1, nw ne sw, sd 1950 ft.

LINCOLN COUNTY—T 13n, R 6e, Sec. 8, Atlantic's Beebe 1, sw ne sw lcn.

OKFUSKEE COUNTY—T 12n, R 10e, Sec. 3, Shepperd's Shepperd 1, se nw sw sd 3690 ft.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al's McDuff 1, sw nw se, show gas 5654-64 ft, td 5682 ft sd. T 8n, R 14e, Sec. 14, C. O. Cannady et al's Smith 1, sw c ne nw nw, rig and tools. T 7n, R 14e, Sec. 5, C. O. Cannady et al's Travis 1, c sw ne, rig. T 6n, R 15e, Sec. 7, Perrine et al's Ringling 1, nw c ne, spudded and sd.

LATIMER COUNTY—T 6n, R 18e, Sec. 4, Choctaw Gas Co.'s Weaver 1, c ne nw, dr 1650 ft. T 6n, R 19e, Sec. 16, P. English's Weaver 1, c nw se sd 300 ft.

ATOKA COUNTY—T 1n, R 15e, Sec. 9, Edgerton et al's Rolland 1, c nw sd 700 ft.

OKLAHOMA COUNTY—T 12n, R 4w, Sec. 17, C. F. Cuniff, Trustee et al's St. Joseph 1, sw c ne sw se, sd 6700 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 19, Bunte et al's Bruner 1, se c nw, rig.

HUGHES COUNTY—T 7n, R 9e, Sec. 17, Gilcrease's Buckner 1, ne c nw se, td 3755 ft d&a.

ROGER MILLS COUNTY—T 13n, R 21w, Sec. 10, Richfield O&R's Hiatt 1, se c rig, abandoned, will not be drilled. T 12n, R 24w, Ses. 23, Ute Oil Co. et al's Williams 1, c sw dr 3643 ft. T 11n, R 26w, Sec. 4, J. J. Rook et al's Davis 1, c nw ne (owd) sd 2955 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey's Robinson 1, c ne nw sd 150 ft.

CADDO COUNTY—T 9n, R 13w, Sec. 18, J. J. Wright et al's Boys 1, nw c, lcn abnd.

WASHITA COUNTY—T 8n, R 19w, Sec. 29, Snodgrass et al's Blockner 1, nw c dr 1565 ft. T 8n, R 18w, Sec. 21, Burns & Prince's Dock 1, sw c sd 150 ft.

GREER COUNTY—T 7n, R 21w, Sec. 23, H. A. French et al's Murphy 1, sw nw se sd 1490 ft. T 7n, R 22w, Sec. 1, Roy Good et al's Cliffel 1, nw c sd 1615 ft.

HARMON COUNTY—T 4n, R 24w, Sec. 17, Harmon-Tex Oil Co.'s Headley 1, ne c, td 2592 ft d&a.

COMANCHE COUNTY—T 3n, R 9w, Sec. 3, Okla. Nat. Gas Co.'s Doebel 1, ne c sw sw sw, td 1450 ft d&a.

STEPHENS COUNTY—T 1n, R 8w, Sec. 25, Rose Southard's McKinley 1, ne c sd 1063 ft. T 1n, R 7w, Sec. 1, Junior Oil Co.'s Thompson 1, ne sw se td 3329 ft d&a. T 3s, R 8w, Sec. 3, A. L. Andree's Patrick 1, c s½ sd td 2759 ft d&a.

HUGHES COUNTY—T 5n, R 11e, Sec. 15,

J. J. Wright's Roberts 1, se c sw, 2M gas 915-18 ft, sd 1645 ft.

GARVIN COUNTY—T 2n, R 2w, Sec. 24, Malernee Oil Co.'s Phillips 1, ne c sw, lcn.

COAL COUNTY—T 2n, R 8e, Sec. 10, Whitney et al's Miller 1, se c ne (owd) sd 760 ft. T 1n, R 8e, Sec. 35, W. E. McGraw O&G's Stiring 1, ne c se, dr 450 ft.

ATOKA COUNTY—T 3s, R 10e, Sec. 18, Bookshire et al's Guinn 1, nw c, show gas 360-372 ft sd 500 ft.

CARTER COUNTY—T 4s, R 2e, Sec. 32, Tex-Okla. Drlg. Co.'s Anderson 1, se ne se, sd 2806 ft.

BRYAN COUNTY—T 6s, R 7e, Sec. 14, W. A. Johnson's Ussery 1, se c sd 325 ft. T 7s, R 10e, Sec. 8, Bryan Oil Co.'s Childs 1, ne se sw sd 660 ft.

ARKANSAS

CHICOT COUNTY—H. R. Smith's Lytle 1, 31-8-3, cemtd back to 2865 ft, sd old td 2925 ft.

CLAY COUNTY—S. C. Jeffus, Tr.'s, Underwood 1, nw ne 4-20-8e, dr hd rock 1100 ft.

CLEBURNE COUNTY—Donnell et al's Fee 1, 33-11-9, sd 3740 ft.

CRAWFORD COUNTY—Citizens Gas Co.'s Hood 1, ne se 18-9n-32w, sd 850 ft.

DALLAS COUNTY — John James, Tr.'s, Fordyce Lbr. Co. 1, ne nw 11-9s-15w, 10-inch 176 ft, dr rock 2228 ft. E. C. Brewer, Tr.'s, Hillman 1, se ne 20-10-13, 10-inch 138 ft, cored hd sandy lime and sand 2644-48 ft, tested 9 fourbles mud thru ds 2628-48 ft, seat did not hold, will try to test again, td 2648 ft.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-3n-19w, cas pulled, hfsw, ta, td 3756 ft.

GRANT COUNTY — Spann & McClung's Sarah Page 1, sw nw 3-3-12, ur 210 ft, 7-inch cas, id 438 ft.

HOT SPRINGS COUNTY—John Watkins, Tr.'s, Cunningham 1, 11-5-16, dr 180 ft.

JOHNSON COUNTY — Blackwell O&G Co.'s Wyver 1, 21-8-23, ta 5600 ft.

LA FAYETTE COUNTY—Crawford Drilling Co.'s Vaughan 1, 25-19-25, rig. McIver et al's Hattle 1, nw ne 1-20-26, 12½ cas 115 ft, sd 2520 ft. Smitherman & McDonald's Bodcaw 1, se nw nw 16-15-22, 12½ cas 42 ft, 8¼ cas 1176 ft, bailed and swabbed sw show oil at 1194 ft, cored oil sand 1194-98 ft, sd wo, td 1198 ft. Cosby Prod. & Royalty Co.'s Biddle 1, ne ne 1-20-26, lcn.

LAWRENCE COUNTY — Marguerite Dev. Co.'s Broadway 1, 31-17-1, sd 45 ft.

LITTLE RIVER COUNTY—Fay Roberts Oil Co.'s Russell 1, nw nw 25-12-29, lcn.

LOGAN COUNTY—M. W. Greesom's Parks 1, 21-8-24, sd 1309 ft. J. H. Flowers' White 1, 13-5-26, sd 3610 ft.

MADISON COUNTY—J. W. Baxter's Hallem 2, cent sec 17-16-26, sd 405 ft; Hallem 3, ne sw 1-17-26, sd 42 ft.

MILLER COUNTY—E. & F. Oil Co.'s E. L. Beck 1, 36-15-26, 6⅝ cas 2792 ft, 4½ cas 2957 ft, tested sw 2961 ft, sd 2968 ft. Lenz et al's Johnson 2, 24-15-26, cemt 800 ft 8-in cas to shut off fresh water flow, td 4700 ft; Johnson 3, ne nw 24-16-26, sd 2850 ft. Bullock Oil Co.'s Hervey 1, 2-15-26, ta with junk in hole, td 2832 ft. East Texas O&G Co.'s Hervey 1, 2-15-26, ta 890 ft. Gusher Bend Oil Co.'s Adams 1, nw nw 24-14-26, 10-in 115 ft, sd 2594 ft. O'Mara et al's Person 1, 31-15-25, lcn. Fitzwater et al's Beck 1, sw se 33-15-26, 10-inch 85 ft, sd. Selzer & McRae's Rose 1, ne nw 9-16-26, 10-inch 98 ft, sd 475 ft. J. D. McRae's Smith 1, nw se 28-15-26, dk.

OUACHITA COUNTY — Belmont et al's Dean 1, 16-15-17, top red beds 2765 ft, sd junk in hole 2907 ft. Copenhaver et al's Elliott 1, se se 11-15-17, cemtd 6-inch cas 2185 ft, td 2190 ft. Wesson & Bonner's Wesson 1, sw nw 22-15-19, 6⅝ cas 2083 ft, wo power to pump 300 ft fluid in hole, td 2169 ft. J. D. Reynolds' Grayson 1, 21-15-19, 10-inch 42 ft. Nacatosh 1502-14 ft, cored sand 2175-90 ft, recemtd 6-in cas 2151 ft, td 2197 ft.

PIKE COUNTY—Henderson et al's Tilyou 1, 26-8-24, show heavy oil 567 ft, dr rock 2378 ft. E. R. Henderson's Lee 1, sw se 31-8s-24w, dk.

POPE COUNTY—Ark. La. P. L. Co.'s McFadden & Brooks 2, ne nw 15-9-21, 13 3/8 cas 1900 ft, tested 1 mil ft gas 3285 ft, 8⅝ cas 3415 ft, 8-inch cas 3451 ft, dr salt water sand 4094 ft; Baird 1, se nw 11-7n-20w, 10-inch cas cemtd 1168 ft, dr lime 1508 ft.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26, sd 1536 ft. Ark. Valley Gas Co.'s Turner 1, se se 27-5n-30w, lcn. Waldron O&G Co.'s J. G. White 1, sw nw 17-3n-29w, 10-inch 225 ft, dr 950 ft (sec. hole).

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29w, sd after testing sw 2515 ft.

UNION COUNTY—Hickman et al's Hogg 1, 35-16-17, top Graves sand 2351 ft, top red beds 2779 ft, coring sandy shale 3328 ft. Rice et al's Whatley 1, 7-17-15, sd 2186 ft. Southern Prod. Co.'s Wingfield 1, se nw 16-19-15, 10-inch 103 ft, sd 2608 ft. Wilson & Chapman's Hadley 1, ne sw 3-18-13, 10-inch 102 ft, top Nacatosh 2300 ft, top Meekin sand 2550 ft, top red beds 2933 ft, sd with 600 ft fluid in hole 30 per cent sw, td 3570 ft. C. H. Murphy et al's Union Sawmill 1, nw sw 18-18-13, 10-inch 111 ft, top Nacatosh 2198 ft, tested sw 2190-22-2 ft, tested sw 2537-52 ft, cording red beds 3010 ft.

WASHINGTON COUNTY—Taylor et al's Runny 1, 1-13-29, sd 1702 ft. Lincoln Lease Holding Synd.'s Townsite 1, 30-15-32, ta 1500 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft. O'Hara & Shetterley's Boyd 1, 12-16-32, ta 850 ft. Delbert Graves' Cunningham 1, 14-15-32, sd in gray sand 602 ft.

VAN BUREN COUNTY—J. S. Martin's Scanland 1, 5-9-13, sd 50 ft.

YELL COUNTY—T. Luckett's Balcon 1, 36-7-12, sd while fsh cas, td 5710 ft.

MISSISSIPPI

Company, Well and Location	Initial Production Bbls.	Depth
HINDS COUNTY (Jackson Dist.)—		
Gulf Ref. Co., McLaurin 1, 30-6-2e	*	2950
Love Pet. Co., Maley 2, 15-5-1e....	¶40	2458

CLARKE COUNTY (Quitman Dist.)—Gulf Ref. Co.'s Box 1, nw se 11-2n-15e, elev 221 ft, 15½ cas 105 ft, 10-inch 922 ft, top Midway black shale 2205 ft, dr chalk 2729 ft.

CLAY COUNTY—Ohio Oil Co.'s Cantrell

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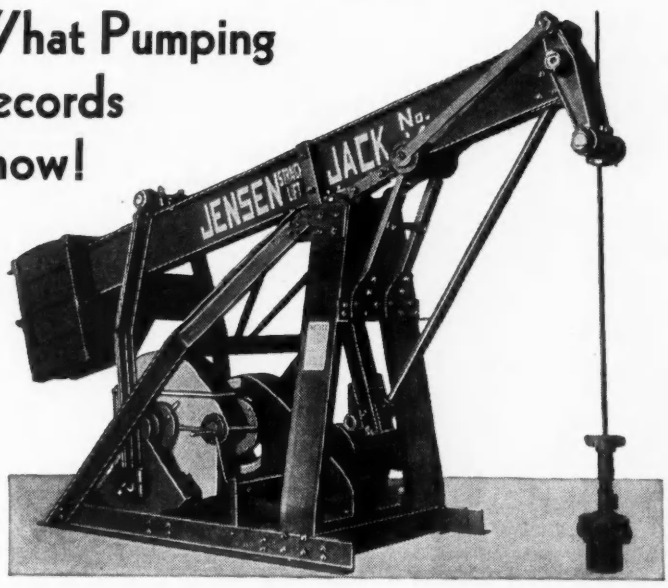

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1, ne ne 15-16-5e, elev 270 ft, 13 3/8 cas 1389 ft, cemtd 9⅝ cas 2929 ft.

COVINGTON COUNTY (Collins Dist.)—Miss. Gulf O&G Co.'s Pope 1, nw ne 35-8n-16w, 12¼ cas 126 ft, top Wilcox 2100 ft, ta in sandy shale 3000 ft.

CHICKASAW COUNTY — Hightower & Golsan's Fleming 1, 20-13s-3e, sd 1562 ft.

GRENADA COUNTY — Carter Oil Co. et al's Dubard 1, nw nw 18-22-4e, top Selma chalk 1787 ft, top Eutaw 2612 ft, sd in red shale 4012 ft (4000 ft contract depth).

HINDS COUNTY (Jackson Dist.)—Gulf Ref. Co.'s McLaurin 1, sw ne 30-6-2e, top Midway shale 2392 ft, 9-inch cas 2466 ft, top Midway chalk 2485 ft, sdtr at 2485 ft, base chalk 2875 ft, dry abn in green sandy shale, td 2950 ft; School Board 1, ne sw 16-6-1e, elev 331 ft, 13-inch cas 108 ft, top Midway shale 2675 ft, ta 2707 ft.

JASPER COUNTY (Bay Springs Dist.)—Bay Springs Pet., Inc., J. H. Keyes 1, nw ne 21-2n-10e, 15¼ cas 104 ft, coring sand and gumbo strks lignite 569 ft.

KEMPER COUNTY (De Kalb Dist.)—W. W. Jones' Rosenbaum 1, lcn not given, dk.

LA FAYETTE COUNTY—F. E. West et al's May 1, 22-10s-4w, rig.

MADISON COUNTY (Jackson Dist.)—Central O&G Co.'s Cameron 1, 11-9n-1e, 10-inch 201 ft, 6⅝ cas 1532 ft, top Midway 2506 ft, dr lime 3400 ft.

MONROE COUNTY (Amory Dist.)—Amory Dev. Co.'s Bourland 1, sw ne 2-15-19, sd in brown sand 3007 ft. P. J. McAlpine's Cowart 1, ne sw 2-12-19, 10-inch 694 ft, 8¼ cas 1276 ft, sd with fsh job 1830 ft. Associated Royalties' School Board 1, sw se 16-15-17, sd 60 ft. Amory Pet. Corp.'s Harris 1, nw nw 18-13s-17w, elev 455 ft, 10-inch top Paleozoic rock 478 ft, top gas sand 2324 ft, cemt 6-inch cas 2324 ft, arr dr plug.

RANKIN COUNTY (Jackson Dist.)—Love et al's Muse 1, se se 32-7-4e, 12½ cas 600 ft, sd in sandy brown shale 2208 ft. Love Pet. Co.'s Moore 1, se nw 28-6-2e, sd 900 ft. Millstein O&G Co.'s Gammill-Hartfield 1, sw ne 6-5-2e, hf fluid, wo 2500 ft. Atkisson et al's Valentour 1, nw nw 18-5-2e dk.

SMITH COUNTY (Raleigh Dist.)—Pocahontas Nat. Gas Co.'s Adams Banks Lbr. Co. 1, ne sw sw 10-3n-7e, elev 425 ft, 10-inch cas 441 ft, coring Wilcox 2050 ft.

WARREN COUNTY (Vicksburg Dist.)—Dixie Pet. Co.'s Clark 1, nw nw 6-16n-5e, elev 278 ft, 12¼ cas 77 ft, 8¼ cas 2186 ft, dry in Sparta 2248 ft, claim slight oil show 2330-40 ft, coring sand and gumbo 2542 ft. Vicksburg O&G Co.'s Dornbusch 1, sw ne 8-18n-5e, sd 1600 ft.

WEBSTER COUNTY — Cumberland Oil Co.'s Henley 1, 15-21-11, ta 1865 ft.

WINSTON COUNTY (Louisville Dist.)—Miss. Drilling Co.'s Scarbrough 1, nw nw 15-13n-14e, coring red gumbo 2537 ft.

YALABOUSHA COUNTY (Water Valley Dist.)—J. D. Collett et al's Blackmer 2, sw nw 14-11s-4w, 12½ cas 103 ft, 8⅝ cas 2426 ft, dr shale 2615 ft.

ALABAMA

MADISON COUNTY — Tennessee Valley O&G Co.'s Fee 4, 1-4s-2e, show gas 300 ft, dr limestone 700 ft.

SUMTER COUNTY (Livingstone Dist.)—Forked Lightning O&G Co.'s Nixon 1, sw ne 30-20n-2w, dk.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, sd in limey shale 881 ft; Hobson Bros. 1, 9-8-2w, sd 1450 ft. Oscar Brown's U. S. Land & Cotton 2, 25-3-2w, sd 700 ft.

TENNESSEE

DECATUR COUNTY—Chester County O& G Co.'s Montgomery 1, sd 2075 ft.

MOUNTAIN STATES

MONTANA

BIG HORN—Continental Oil Co., Lynde 2, se¼ sec 21-6s-35e, sd 3405 ft, probably to abn.

CARBON—Spomont Pete Co.'s Cruse 1, 32-6s-18e, dr 100 ft.

CASCADE—Andover Oil Co.'s Floweree 1, se 20-21-2w, sd 1405 ft. Lone Star Mont. Oil Co., McLean 2, se 13-21-3e, dr bel 150 ft.

CHOTEAU — Williston-Shelby O&G Co., Flack 1, se 12-28-11e, dr in Madison 2885 ft.

FERGUS—Northern State Oil Co.'s Woodward 1, se 20-14n-24e, ream 6-inch to sow., 2845 ft. Melton Corp., 24-21n-17e, dr 2850 ft. Pownam Oil Co., 24-19-11e, to res 200 ft.

GLACIER — Fulton Pet. Corp.'s Blackfeet 1, ne 28-36n-12w, co to bottom at 1240 ft. B&H Oil Co.'s Haines 1, se 2-34-6w, stand, td 2762 ft. Jeffries-Hoerr's Dawson 1, 7-31-12w, sd 2890 ft.

GOLDEN VALLEY—Texas-Pacific's 1, sw 2--8s-21e, dr bel 3750 ft. J. F. Dealey et al's 1, ne 28-5n-22e, to resume.

LIBERTY—Northland O&G Co.'s Yurman 1, 32-33-5e, sd 3475 ft. Sunburst, McLaren 1, se 9-37-6e, sd 3115 ft. C. G. Howard, Schoonover 1, nw 18-36-6e, rigging up.

ROSEBUD—Prairie O&G Co.'s 1-X, 26-10-39e, cem 12½-inch at 2400 ft.

TETON—Andover Oil Co.'s Carlson 1, 5-24-4w, stand 150 ft.

TOOLE—Liquid Gold Oil Co.'s Roberts 1, ne 25-36-12, bldg new rig, td 2150 ft. International Royalty Holding Co.'s Henry 1, 26-35-36, ur pipe to dd 2650 ft. A-1 Pete Co., se 24-36-1e, wait pipe 1555 ft.

YELLOWSTONE—Peter Antonioli, 21-2n-25e, dr bel 1200 ft.

WYOMING

BIG HORN—Westland Oil, Inc., 24-54-95, gas at 510 ft. Wisconsin Holdings, 5-55-97, sd 665 ft. Yellowstone Pete Co.'s 1, 7-57-97, sd at 4080 ft with show oil.

CARBON—Midwest Refining Co., U. P. 1, 27-11-81, sd 1810 ft. Pete Expl. Co. of Calif., 29-23-89, dr 2500 ft.

CONVERSE—Converse O&G Co., 27-33-72, sd 1410 ft. Pioneer Oil Co., 5-31-70, to dr new test.

FREMONT—Texas Prod. Co.'s State 1, 36-44-95, cem 6⅝-inch at 4463 ft, td 4485 ft. P. & R. 1, 33-34-92, sd 4906 ft. Yellowstone Oil Co.'s 1, 15-39-32, dr 600 ft. Ward O&G Co., 28-34-90, gas show 1500 ft. Wiebolt et al., 2-35-99, dr 1250 ft in red beds.

JOHNSON—R. C. Tarrant et al., 4-43-82, dr bel 2150 ft.

LINCOLN—Mountain Oil Corp.'s 1, 36-25-116, td 1500 ft. Wyo. Prod. Co., 14-42-113, dr bel 1225 ft.

NATRONA—Summit Oil Co., 21-33n-80w, sd 1220 ft, wait equip. Midwest's 11, nw 32-34n 77, stand 5340 ft: Cuyler Oil Co., 23-36n-85w, dr 500 ft. Golden West Oil Co., 36-36-81, ready to res 1242 ft. Midwest's Midway 1, ne 23-35n-79w, dr 5544 ft.

NIOBRARA—West Virginia Synd., 7-35-62, td 987 ft, cas trouble.

PARK—Resolute Oil Co., 17-57-101, dr up bailer 8345 ft.

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DIAMOND CHAINS

NIKROME SHAFTS

SWEETWATER—Vermillion Oil Co.'s 1, se 16-12-99, co 3465 ft.

UINTA—Park City O&G Co., nw 6-15-113, dr bel 2400 ft.

WASHAKIE—Dakota-Wyoming Oil Co., ne 24-47-90w, small show 200 ft, to be cased off. Ohio Oil Co., lot 14, 19-45-92, 15½-inch cem at 782 ft.

WESTON—LeFaivre Oil Synd., se 29-45n-68w, dr bel 785 ft.

NEW MEXICO

CHAVES—Warman Oil Trust, Siebert 1, ne 27-13-24, ur to 2045 ft.

DE BACA—Matador Oil Co.'s Wood 1, se 6-4n-20e, dr at 3010 ft.

HARDING—Milwaukee Synd., Kerlin 1, se 34-21n-30e, dr at 435 ft.

LUNA—Angelus Oil Mining Ass'n 1, se 20-21s-10w, dr 6076 ft.

McKINLEY—J. W. Halsell's Santa Fe 1, 17-18-9w, sd 3255 ft. Wms. et al's A.T.S.F. 1, se 19-18n-8w, stand 2250 ft. United Kern Pete, Inc., 1, sw 1-18n-11w, lcn. Dysart et al, Dysart 2, ne 14-14n-10w, dr 1310 ft.

MORA — Santa Fe Diox-Ice Co.'s Wagon Hound 1, ne 14-19-21, dr 90 ft.

OTERO—Ernest et al's 1, se 20-25s-7e, wtg for equip at 1328 ft.

RIO ARRIBA—Berrenger et al's Hartman 1, ne 8-29n-7w, sd 825 ft. San Juan Pete Co.'s Gov't 1, se 14-30n-7w, sd 250 ft. Governador Oil Co.'s 1, se 12-29n-7w, dr 861 ft.

SAN JUAN—Dorothy Oil Co.'s Terwilliger 2, 29-30-9w, stand 1750 ft. Kutz Canon O&G Co.'s Day 1, se 20-28n-10w, sd 2400 ft. Childers Dr. & Pr. Co.'s Westwater 2, nw 23-31-16w, dr 2490 ft. Rio Grande Dev. Co.'s 2, 9-29-11, hauling cas to res 1380 ft. Continental Oil Co.'s Rattlesnake 24, 1-29n-19w, fsh 4730 ft, for dr pipe. J. B. Witt O&G Co.'s Magnum 1, se 33-29n-11w, lcn. San Juan Leaseholds, Bowman 3, ne 30-30-15, dr 2650 ft. Reserve Oil Co., Reserve 3, 36-22n-14w, dr 600 ft.

SAN MIGUEL—Pioneer O&G Co.'s Thunderbird 1, nw 14-15n-16e, wait 2340 ft. Starr Oil Co.'s Adams 1, ne 25-17n-16e, dr 3394 ft. Cibola Pete Co.'s Crown 1, se 9-13n-14e, sd 840 ft. Hershfield Dev. Co.'s Cabra Springs 1, ne 12-12n-22e, prep to res at 1415 ft. Kull et al., Cherryvale 1, ne 34-17n-21e, dr 465 ft.

TORRANCE—Williams et al's Staplin 1, ne 16-8n-10e, prep to res 1643 ft. J. B. Witt O&G Co.'s Kutchem 1, 12-17-7e, dr 1475 ft.

VALENCIA—Acme Oil Co.'s N. M.-Ariz. Land Co.'s 1, ur to 4958 ft. Harlan et al., Harlan 1-A, 5-6n-2e, wtg for boiler at 6140 ft.

COLORADO

ADAMS—N. M. Slatt's 1, se 27-26-64w, dr 2572 ft.

ARAPAHOE — McDebb Drlg. Co.'s Fitzsimons 1, 7-45-55, dr 5752 ft. Merrett et al., U. P. 1, nw 17-5-65, stand 1600 ft, hfw.

BACA—A. R. Jones Oil & Optg. Co., Boise Cattle 1, 22-34-42w, stand 4760 ft.

EL PASO—Utemore Synd., Cannon 1, ne 10-16s-66w, stand 1100 ft.

GRAND—Oil Mineral Lands, Inc., McElroy 1, sw 14-2n-81w, dr 110 ft.

HUERFANO—Parker Club, Fee 1, se 4-28s-68w, sdtr 5 3/16-inch cas, td 4116 ft.

JEFFERSON—Ruby Hill O&G Co.'s Braden 1, se 24-4s-69w, show gas, dr 3873 ft.

LAS ANIMAS—Oklahoma Drlg. Ass'n, Radcliffe 1, ne 28-28-52, sd 100 ft.

LA PLATA—McGarr Pete Co.'s Pinon Mesa 1, ne 34-33n-12, lcn. Klem Pete Corp.'s Olbert 1, se 9-25n-12w, stand 3125 ft. Murchison Oil Co., Doescher 1, nw 29-33n-12, sd 1225 ft.

LINCOLN—Eastern Colo. Oil Corp.'s State 1, 36-14n-57w, dr at 3380 ft.

MOFFAT—Mtn. Fuel Supply's State 2, tract 37-12-100, making repairs after gas fire at 2180 ft. S. H. Keoughan et al's State 1, sw 16-4n-101w, sd 2960 ft.

MONTROSE—Uncompahgre O&G Co., Colorado Title & Trust 1, 27-50n-10w, dr 45 ft.

MORGAN—Ind. Terr. Illum. Oil Co.'s State 1, ne 16-1n-57w, making repairs at 4090 ft.

PUEBLO—Anchor Oil Co.'s Easley 1, sw 35-22s-57w, wtg cas 520 ft.

PARK—So. Park Oil Co.'s Milligan 1, se 13-9s-76w, dr 1818 ft. So. Park O&G Co.'s Eache 1, ne 6-9s-76w, sd.

ROUTT—Ingersoll et al's Omholt 1, 29-4n-87w, sd 115 ft.

WASHINGTON—Middlemist Oil Co.s' Middlemist 1, se 14-4-56, stand 1510 ft.

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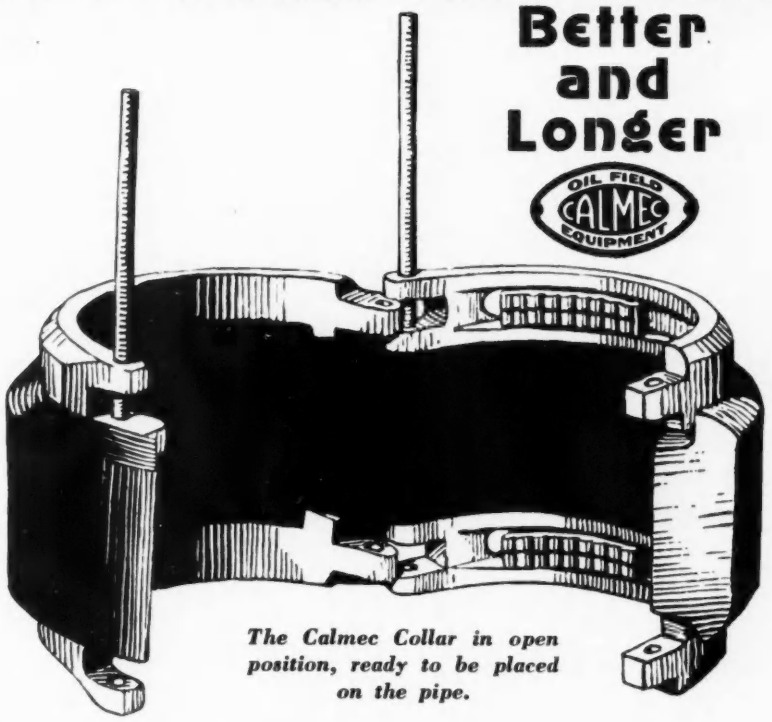

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▼ ▼ LETTERS ▼ ▼

Dear Sir:

Your "World Petroleum in Review" items form a most interesting part of THE OIL WEEKLY. Each country has now to keep itself informed about the doings of others, and I think that American producers would be wise to slow down in order that they may conserve the oil resources of the U. S. A. It is a very involved question, however, and local interests will have their say.

The problem of over production is not for us here in Australia—as regards oil; but we are now suffering from a surplus of wheat, wool and fruits.

Victoria is the first Australian state to produce oil in payable quantities and the yield is increasing as wells come in. We have 23 wells and five producers at present. The S. A. Oil Wells Company, the pioneer of South Australia and Victoria, have just installed a dehydrating plant, using a separator, and arranged with the Newport Oil Refining Company to treat the oil produced. Shipment will begin this month.

Another promising field—at Longford, some 70 miles west of Lakes Entrance, is likely to be tested soon, the presence of a very definite dome in the Tertiary strata having been shown by H. S. Lyne, our geologist and field manager. The general shortage of cash is holding us back.

In Queensland, Australian Roma Company has six plants in action over a large area in the vicinity of Roma, but has not yet found oil in noteworthy quantities. Many Californian drillers are there and several big rotary plants. Oil Search, Ltd. has been doing a lot of geological work around Longreach and in other districts.

Papua and West Australia are quiet. In New Guinea, Oriomo Oil Company has developed a small production from the "grass roots" and is proceeding carefully on a scientific basis. The company is the operating end of Oil Search Ltd. and has spent a lot of money in the search for oil.

New Zealand is staging a revival. Motorua Oil Company has a production of 10 barrels from its first well, and the Blenheim Exploration Company well made nearly 400 barrels in three days recently. This spasmodic blow-out business is a feature of the Taranaki field, and is due to the gas having become mixed with flowing mud, or "papa." The same phenomenon occurs in the Vailala field of Papua and the past violent tectonic movements are to blame. The recent earthquake at Napier may be a sample of what has happened in the past, and the chances of getting regular production are much lessened.

Here, in the south of Australia, the opposite is the case, and a little more definite folding would have given us fairly big oil fields. However, we have found some oil and shall look for more. We are quite at the mercy of the importers at present, and have to pay 54 cents per gallon for petrol in the capital cities of the Commonwealth. This high figure is largely due to the iniquitous taxes, I must confess.

THE OIL WEEKLY comes regularly and is read by us all with interest. After the office has finished with its copies they are lent to the drillers and worn out by reading.

Yours sincerely,

H. CHARLTON DOD,
(B. Sc. Petroleum Engineer).

Lakes Entrance, Victoria, Australia.

* * *

Dear Sir:

The article appearing in THE OIL WEEKLY of March 20, (page 21-30), entitled "East Texas Line Building Depends on Legislature," was evidently written by your editorial staff—the more to be regretted, since that staff should be a well informed personnel. Your good

A Money-Maker for the Oil Man
—Two-Ways

The T-I-W CHRISTIAN BIT is a money-maker for the oil man two ways. First, he can drill with the speed and efficiency of the shortest fish tail bit. This means less power cost and reaching the pay sand quicker. Second, the oil operator can get a straighter hole from the T-I-W because he can get all the advantages of a long bit without sacrificing the efficiency of the short bit principle. A straight hole often means the saving of thousands of dollars as every oil man knows.

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Write for Illustrated Folder

TEXAS IRON WORKS

1401-1423 MAURY STREET

Houston, Texas

publication should not be permitted to strike such an ill advised tangent. Certainly your editor did not intentionally misrepresent the facts to create unfavorable sentiment in the legislature on the proposed constructive legislation. However, the least that might be said is that he is either misinformed or uninformed. His article states as facts what are absolutely untrue.

You are undoubtedly interested in the welfare of the industry, and I am sure you must have the interests of the people and the state at heart. Believing that to be true, you should be interested in some facts which will be hereafter stated.

The article in question has this to say about the proposed legislation: "The legislation, which has been pending for several weeks, * * * and lines would be permitted to establish tariffs lower than set by their valuation to meet competition." It does not propose "that the Texas Railroad Commission be empowered to fix pipe line tariffs in the state" for the simple reason that the commission already has such power—about which much might be said. It does not provide "rates which would return 10 per cent on actual investment would be fixed" nor does it provide that "out of the 10 per cent must come operating expenses and overhead."

Surely your editor must have failed entirely to grasp the significance of the proposed legislation. How can it be possible that an editorial staff dealing so extensively with vital facts and figures relating to this great industry fail so miserably when it comes to analyzing such a vital question as transportation costs. What is more vital to any industry than transportation?

How does he know that the building of the proposed line depends entirely upon the acts of the legislature? The representatives of other pipe line companies made similar representations to the members of the legislature but they could not have been serious—witness the fact that the Texas Pipe Line Company is proceeding with its plans. Mr. Morgan of the Moody-Seagraves-Morgan Company stated that they could not proceed with their proposed line because they would not be able to finance it if this legislation was passed. That was merely a presumption on his part. He said they proposed to raise money by selling bonds, but with legislation regulating the earnings of his proposed public utility (and it is such under existing laws) they could not sell such bonds. Any banker familiar with public utility bonds will likely be able to dissuade him of such a notion.

There is an organized attempt to coerce the legislators to believe no more pipe lines will ever be built within this great state if the proposed bill passes. By your article your publication has become a party to that end. You owe it to the industry as a whole to use your best efforts to repair the damage done and in addition thereto lend your constructive efforts to an analysis of the situation and support of such vital corrective measures. If you are aligned with special inter-

Comfortable homes for workers .... *in a Gulf Coast Field*

Fortunate indeed are the field workers who live in such fine, comfortable homes as these. And there is no reason why workers in established fields shouldn't have nice homes. Houston Ready-Cut and Sectional Homes make it easy—and economical too—for them to be comfortably housed.

These homes reach you complete, ready to erect with plans and blue prints that are easily followed. Accurately constructed at the mill, each is a substantial well built, comfortable home.

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ests and have not the industry's welfare at heart then you will not likely be interested in the correction of the error made.

Yours truly,

C. B. KING,
Rathke Oil Company.
Wichita Falls, Texas.

THE OIL WEEKLY in this connection has made no error, sought to influence no legislation. In reporting a news story, purely as news, our reporter merely, as has been considered good practice in news reporting, gave the story as was given to him by the interests proposing the line. We assumed that they knew what their intentions are: they said that if the law as proposed is passed, the line will not be built.

* * *

Dear Sir:

I wish to add a few remarks to the subject of oil over the world in general.

A few years ago John Muir and other geologists were sent out by the Shell Company, Iraq being the parts unknown at that time, with the result that some wells were drilled and then a couple of wells were brought in and were reported all over the world as 90,000 to 100,000-barrel producers daily. Well do I remember when a friend of mine, an official of a certain large company, passed that information on to me and at the same time stated that this meant bad times for the oil business. As a matter of fact they have never even built the pipe line and as I understand it, it would take at least two years to build it, and besides they all want a different line. In addition, it would mean a vast expenditure which is not justified when oil is plentiful enough to supply the market at reasonable prices.

Yet this information has been constantly "pressed" to the public and oil men, for some reason which does not look to be for the interest of the oil industry.

Every one knows how this country of supposed 100,000-barrel wells is divided among four big outfits. Therefore why do they keep using this club all the time to make overproduction of the future look worse than it is? It is the same way about every well drilled anywhere; as a rule, you will note, they are all brought in for about two or three times the actual amount they would produce (many of them would not produce one-fourth of what they are reported) yet it keeps that old fear crawling up the small oil man's back, and I guess acts the same way on the big ones, to a certain point until a man with a lot of statistics releases the feeling a little but in order to be safe, keeps the "chill" there to be on the safe side too.

I noticed the other day that the United States, including shale oils, etc., had a "potential reserve" of around 500,000,000,000 barrels. There it is again—the "potential" to the front. During the 25 years I have been in this "game" up to the last few years—from Mr. David White on—it was always impressed that oil in the United States was just about gone, and would only last a few short years; then we felt the "chill" of being without oil and everyone was called upon to be patriotic. And silently the press eased out the information that it was a "battle for oil" on all fronts, when it is always a battle for trade instead. It seems to me this line should be changed as it tends to create depressions and create fear instead of steadying oil stocks and helping the oil industry, as it should do, by giving out reports that are cold facts, and at the same time show where oil and its by-products may be used in the future, as for example: the Pan American Highway, if completed, will have its affect on the crude market and will increase consumption.

If for example, the pope of Rome would recommend to Catholics of South and Central America, the use of gasoline for candles, or if the 400 million Chinese were to use a few drops of gasoline instead of joss sticks; or if the 350 millions in India were to use a few more drops each of our "overproduction," perhaps then we could use some of that "potential" aforementioned.

I would suggest that Mr. Roy Leigh use some of the information which he has surely accumulated on his world trip, in telling us some of these things; also have Mr. Leigh tell us what the Russian people could consume if the Russian government would let them have a few drops to use at home instead of "dumping;" have him tell us what the possibilities are for consumption in Russia along with statistics about production. It looks like with their Ford plant, the Russians will need more roads, and with industry and new machinery that these dreamers will have to get back to earth some of these days and use oil and its by-products to keep going.

Please tell us some of the things what would help the minds in the oil business and that would help get rid of some of this fear, that in the end will help to get rid of depression in the oil business.

Tell us—if the independents would build refineries and pipe lines—could they compete by merging in this manner, on refining and production, through stock issues to themselves and the public? Tell us facts; for oil men are not dreamers; neither are they pessimists—for to exist in this business an oil man has to be an optimist.

Trusting that this letter may suggest something, I am,

Very truly,

D. A. WILLIAMSON,
Producer & Drilling Contractor.
Tampico, Mexico.

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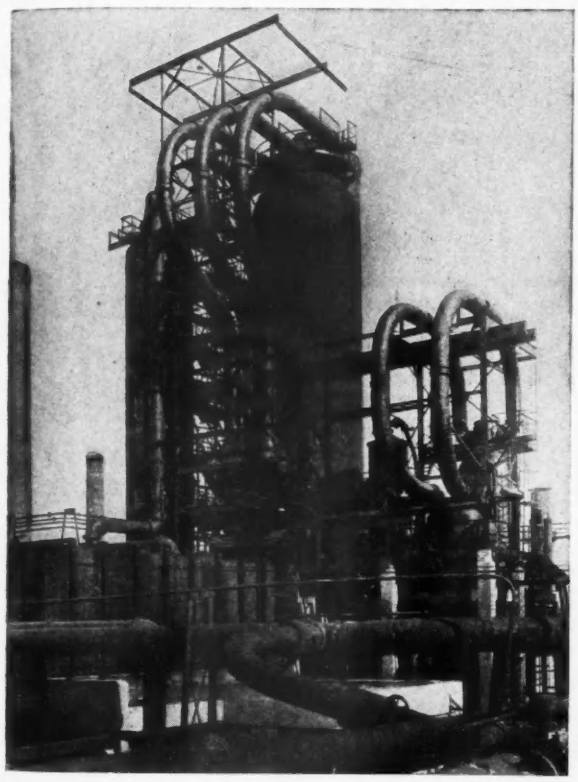

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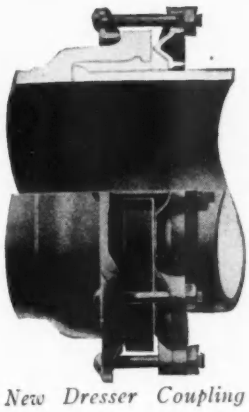
Bell and Spigot Clamp

S. R. Dresser Manufacturing Company

S. R. Dresser Manufacturing Company, Bradford, Pennsylvania, announces a new bell and spigot repair clamp, known as style 4½ H.P. In this clamp a gasket of reverse wedge-shape overlaps the caulking to give a perfect seal whether or not the joint is straight or out of alignment. The clamp ring confines the gasket and regulates its compression.



New Dresser Coupling

It is designed to offer sufficient flexibility, provided by the resiliency of the gasket, to permit considerable movement without impairment of the use of the clamp. The clamp is simple in design and light in weight.

A descriptive folder is available from the manufacturer.

Samson Hoist

Resistcor Engineering Corporation

Resistcor Engineering Corporation, Tulsa, is manufacturing a new type of Samson hoist for use with Model 20 McCormick-Deering tractor, a hoist which offers all steel construction and fewer moving parts.

It is designed and constructed to meet the demands for a heavy duty hoist for pulling rods and tubing, bailing, moving rigs and heavy machinery, and for general lease work.

The hoist is mounted on the front of the tractors, with the weight so distributed over the entire tractor as to offer equal balance, and so that all load strains are carried directly to the anchorage through the side frames of the hoist. The hoist is operated from the driver's seat of the tractor, and the controls are easily accessible to the operator.

The leading feature of Samson hoist is the simplicity in having so few moving parts. The clutch mechanism consists of two steel parts which engage directly, the cable drum. It is driven by only one chain from a special power take-off, direct to the countershaft of the hoist. From the countershaft, the drive is continued by a pinion to a ring gear, which is attached directly to the drum shaft. The speed changes on the cable drum are obtained through a special-built three-speed and reverse power take-off, the reverse of which is equal in speed to the high forward speed. The Samson winch is attached to either the wheel type or the crawler equipped tractor.

New Fire Extinguisher

Southern Laboratory

Southern Laboratory, Richmond, Virginia, is introducing to the oil industry Lightning fire extinguisher, a patented chemical product for rapidly extinguishing fires. The product is a combination of six chemicals, and is put up in quart containers in dry chemical form. While the quart containers hold two pounds of the extinguisher, the product disseminates and floats in the air when thrown from the hand or the container.

The extinguisher is thrown at the base of the fire, spreading in the air when liberated. When coming in contact with the flame the chemical combination becomes carbon dioxide, smothering or snuffing out the blaze.

While the product is being introduced primarily for the extinction of small fires before the blaze has had time to spread over a wide area, it has been found applicable to gas well fires and small oil tanks. Eylers Oil & Gas Company's Chaffraix 3 well in Red River Parish, Louisiana, was recently snuffed out with the Lightning fire extinguisher after it was ignited by a spark while flowing several million feet of gas daily.

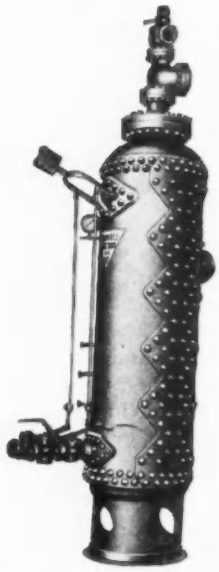
J. A. Burton, who is introducing the product to the oil industry in the Southwest, announces the appointment of Norvell-Wilder Supply Company and T. T. Word Supply

New Type Hoist announced by Resistcor Engineering Corporation

Company as distributors in Texas and Louisiana. Complete details on the product or a demonstration of how it is used to snuff out oil or gas fires may be had by writing J. A. Burton, Box 4177, Houston.

"Kettleman Type" Gas Separator

Trumble Gas Trap Company



Trumble Gas Trap

Trumble Gas Trap Company, 756 Subway Terminal Building, Los Angeles, announces the Trumble "Kettleman Type" oil and gas separator.

This separator is the outgrowth of research and experimental work both at the Trumble factory and in the field. It further amplifies the original Trumble principle of spreading the oil on the walls of the separator in a thin film, by the addition of a greater surface on which the gas can impinge.

A glass model demonstrating the separation principle was in operation in the Trumble Gas Trap Company booth at the Oil Equipment and Engineering Exposition, Los Angeles.

Complete details on the design and operation of this separator will be forwarded upon request to the above address.

Thermoid Rubber Company, Trenton, New Jersey, manufacturers of mechanical rubber goods, announces that John H. Kelly has joined the staff. He has a long experience in the rubber business. He started with the B. F. Goodrich Company in 1898 and from there went to the Republic Rubber Company, where he rose to vice-president in charge of sales by 1912, later became president of the Hewitt Rubber Company and when this organization entered the Gutta Percha Rubber Manufacturing Company-Robins Conveying Belt Company merger, he assumed the vice-presidency in charge of sales. Since 1928, when he was forced to retire from active duty due to a serious illness, he has been doing special counselling work.

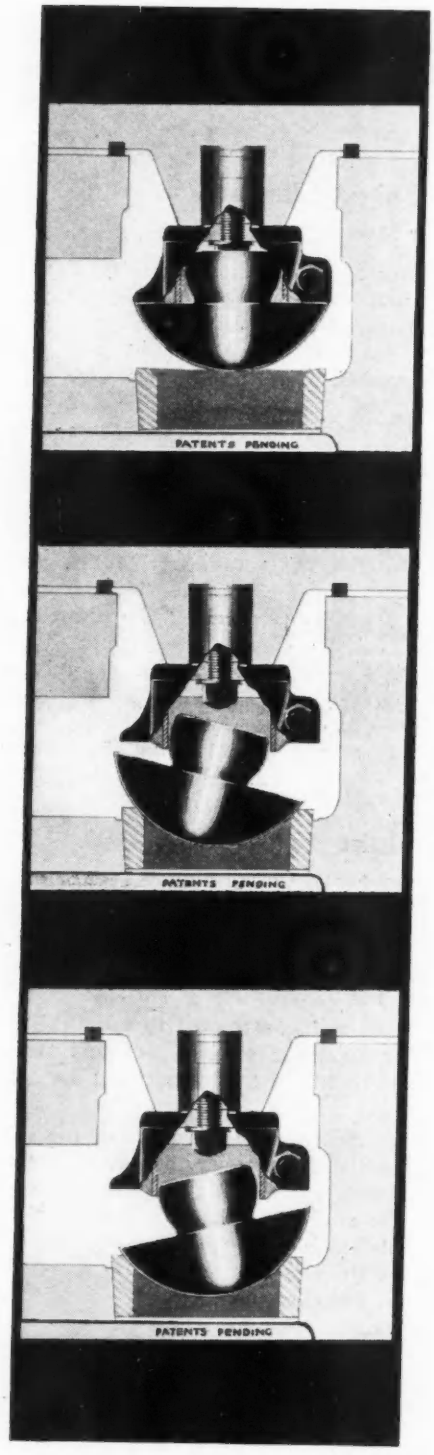
Ball Guided Valve

Calmec Manufacturing Company

Calmec Manufacturing Company, Ltd., 5817 Riverside Drive, Los Angeles, announces a new pump valve for reciprocating pumps used in oil well drilling, pipe line, refinery and general service. It is of the conventional ball and seat type.

The Calmec ball guided valve is claimed to be the first really new departure along the line of pump-valve construction in a number of years. A clear understanding that the actual piston speed is more than twice as great as piston travel has led the manufacturers of the Calmec valve to make a radical change in valve design.

Calmec ball guided valve is designed to deflect the fluid, causing less friction and has a tendency to prevent the valve lifting higher than necessary to discharge the fluid; also to eliminate part of the pressure, which insures a shock-free operation at the highest speed at which the fluid will flow into the pump without excessive slip. It is designed to decrease the high pressure between suction and discharge valves, to result in less piston and valve slip with a corresponding increase in pump efficiency.

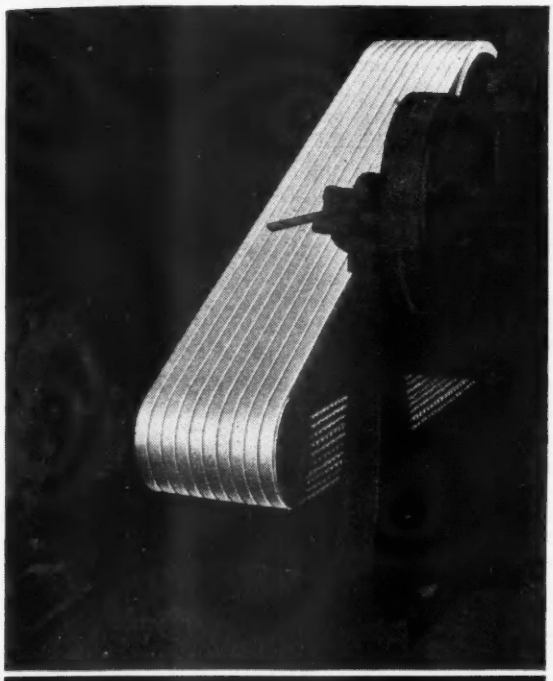


Calmec Valve

Since to decrease pressures it is necessary to increase areas, and to decrease slip it is essential that valves be guided properly, thereby insuring quick, positive even seating, the Calmec ball guided valves are designed with these features in mind.

A catalog giving details of design and construction and prices on this new valve is available upon request.

Here's the Drive



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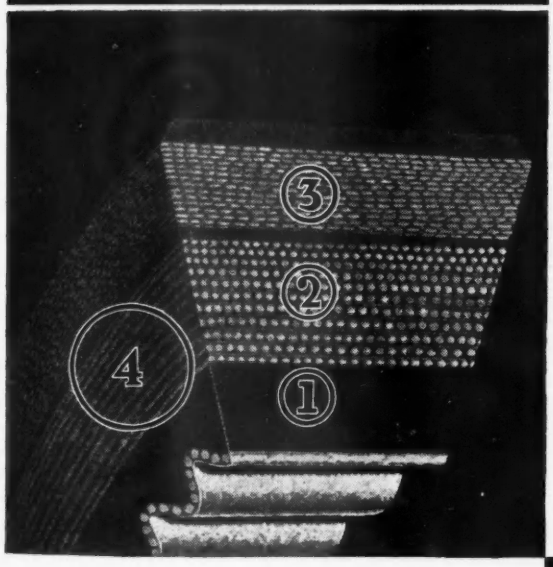

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Do you realize that with Dayton Cog-Belt Drives you can revolutionize the performance of all types of machinery—at extremely low cost? And do you realize that by doing away with old-type drives and installing Dayton Cog-Belt Drives, you'll make your production a far easier, sounder and more dependable operation?

Install Dayton Cog-Belt Drives— Get the benefit of these features

1. Easy on bearings. Greater gripping power permits less tension. **2. Positive Speed.** Firm grip and permanent pre-stretching enable you to set *and maintain* exact speed ratios. **3. Smoother Starting and Running...** through seating action of belts in pulley grooves. Belts are die-cut. They don't buckle, squash, or turn over in the pulley grooves. **4. Vibration Eliminated. 5. Minimum Space Required.** Smaller pulleys. Short center-to-center distances possible without idlers. **6. Rugged... Quiet... Clean... Cool.** No oil or grease to collect dust. Not affected by moisture. And Daytons run without heating... they're "built to bend." **7. Less Adjustment and Maintenance.** Longer life. No lubrication necessary. No dressing. ● But see for yourself that this is the drive for your machines. Send for a Dayton Cog-Belt catalog and a sample section of the belt. Write today for information.

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"USED WHERE PERFORMANCE COUNTS"

▼ Manufacturer and Supply Dealer Notes ▼

Sperry-Sun Well Surveying Company, 1608 Walnut Street, Philadelphia, tells an interesting story of the factors causing crooked holes, effects of crookedness of holes and the reasons for surveying wells in a 24-page booklet entitled "Surwell Service." This booklet tells the basic principles, operation, uses and advantages of Surwell service. Following a number of years of research and development work, the Sperry Gyroscope Company succeeded in creating a small gyroscopic directional indicator of little power consumption, which forms an essential part of the Surwell Gyroscopic Clinograph, the surveying instrument used in Surwell service. In this booklet Surwell service is briefly described. Mechanical effects of crooked holes in drilling are outlined, as are the effects of crooked holes in production, and the geological effects of crooked holes. Methods employed for determining orientation are given and the principles of the gyroscope listed. Illustrations showing mechanical details of the Surwell Gyroscopic Clinograph are used in this booklet, a copy of which is available to interested operators upon request to the address given above. Likewise, a copy of Syfo Clinograph, an eight-page booklet, in which the story of this instrument is told in brief, simple form, is available by writing the Sperry-Sun Well Surveying Company.

Authorized Appleman Bit Service Company, Inc., with headquarters in Houston, has recently been organized for the purpose of carrying on a specialized and complete bit service. Officers of the company are as follows: T. N. Hunt, formerly secretary and treasurer of Speed & Service Iron Works, president; C. H. Larson, associated with B. K. Appleman, vice-president; and J. E. Hargis, formerly with Speed & Service Iron Works, secretary and treasurer.

Several shop and manufacturing units are planned for different parts of Texas, which will be centrally located for servicing the greatest number of operators. The first unit is already established at Henderson, Texas, seven miles southeast of the Joiner field of Rusk County.

The basis of this specialized bit service is the rental of Appleman gumbo bits to oil companies and contractors. The service also includes the sharpening, dressing, treating and facing of bits, other than Appleman's, that are already owned by the operators.

The organization of this company represents a new departure in furnishing bits to operators. The company will contract the bit-work for the well on a contract basis, if desired, thereby allowing the operator to know his bit cost before the well is spudded.

D. L. Thebedaux has called attention to the fact that it was he and not "Trapshooter" Reilly posed with the big bit in a photograph on page 95 of THE OIL WEEKLY of February 6. Mr. Thebedaux was driller on a well at Humble drilled for account of Mr. Reilly under contract by Walter Christian, whose big bit was shown in the picture.

The Nitrose Company, Peoria, Illinois, manufacturers of Nitrose paint for preventing corrosion, has appointed General Supply Company, 317 Merchants & Manufacturers Building, Houston, as exclusive distributor in Texas. This paint, which may be applied over rust after brushing pipe or metal structure with a wire brush rather than necessitating sand blasting, or which may be applied over oily or sweaty surface without cleaning, is being introduced into the oil industry in Texas for the first time.

ANNOUNCING
NEW BIT SERVICE
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WE are establishing service shops at strategic points in Texas for the purpose of giving . . . complete bit service on any bit that the operator already owns . . . . and exclusive rental service of the Appleman Bit numbered serially. The first unit is already in operation at Henderson.

WHY it is a MONEY MAKING SERVICE to the OIL COMPANY and CONTRACTOR:

1: This exclusive rental service will cut down the bit investment of the company or contractor.

2: There will be no old shanks to throw away.

3: We will contract the well on a footage basis if desired. In this way the operator will know the absolute bit cost of the hole before he starts.

T. N. HUNT, *President* C. H. LARSON, *Vice-President* J. E. HARGIS, *Sec.-Treas.*

START CUTTING YOUR BIT COSTS TODAY . . . . MAIL ALL INQUIRIES TO

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AUTHORIZED APPLEMAN BIT SERVICE CO., Inc.

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Phone W-8569

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Squeaks From the Bull Wheel

▼ ▼ ▼

"Harry surprised me by telling me that we're going to take our honeymoon in France."

"How nice, and how did he spring it on you?"

"He said as soon as we were married he would show me where he was wounded in the war."

Tourist: "This seems to be a very dangerous precipice. It's a wonder they don't put up a warning sign."

Native: "Yes, it is dangerous, but they kept a warning sign up for two years and no one fell down, so it was taken down."

Wigg: "It takes brains to get anywhere today."

Wagg: "Yep, that's why so many people use other means of transportation."

Mrs. Bunk: "I caught your daughter kissing the iceman this morning."

Mr. Bunk: "Good heavens! Wasting time on him when we owe the grocer fifty dollars."

Mr. Allen: "I'd like a nice pair of oxfords."

Shoe Clerk: "For an oak desk or mahogany.

"There are lots of couples that don't pet in parked cars."

"Yes, the woods are full of them."

"The mob laughed when I started to sit down at the piano."

"Yes . . .?"

"The stool wasn't there."

"Well, young man, I seem to be spoiling your kissing party."

"I-I-I didn't know she was your daughter, sir."

"Ha! Ha! The joke's on you. That's my wife!"

"I think Salome's dance before Herod lacked originality."

"Why?"

"It was just a take-off from start to finish."

"But Madam, I am only the assistant shoe salesman."

"Well, don't be discouraged. You can work up."

Here's a snappy story: He stretched her garter.

Bob: "Cheer up, Bill, it's time to kiss the bride."

Bill: "You're wrong; it's time for me to quit."

"Why did Ellen refuse to marry the the vicar?"

"She is a bit deaf, and when he asked her to marry him, she thought he wanted a subscription to the organ fund, and told him she had better use for her money."

Customer (indignantly)—That parrot you sold me hadn't been in the house a day before it began to swear dreadfully.

Dealer—Well, Madam, you asked me for one that would be quick to learn.

Found: Lady's hand bag, left in my car while parked. Owner may have same by identifying property and paying for this ad, or, if she will make satisfactory explanation to my wife, I will pay for ad.—Ad in Conroe (Texas) paper.

"My son, do you think that chorus girl is the right sort you could bring home and introduce to me and your sister?"

"Sure, mother, but I'd hate to trust the old man with her."

"Rufe, did you go to your lodge meeting last night?"

"Nah, suh. We dun have to pos'pone it."

"How was that?"

"De Grand All-Powerful Invincible Most Supreme Unconquerable Potentate dun got beat up by his wife."

"What became of your secretary?"

"I married her and now she's my treasurer."

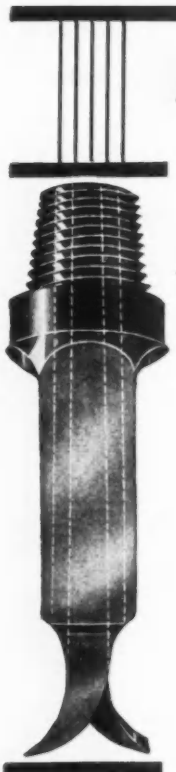
Magnolia—"When Mandy went and got married, us girls done give her a shower."

Pansy—"Dat's sho' was nice. Ah'll bet her husband was glad to get 'er all nice and clean."

"How many kinds of milk are there?"

"Why, there's condensed milk and evaporated milk and—but why do you ask?"

"Well, I was drawing a picture of a cow and I want to know how many faucets to put on her."



Listen, Big-boy, we're using APPLEMAN'S!

Tool Dresser: "Well, how much hole you fellers made today?"

Driller: "Aw, 'bout seventy-five feet, I reckon."

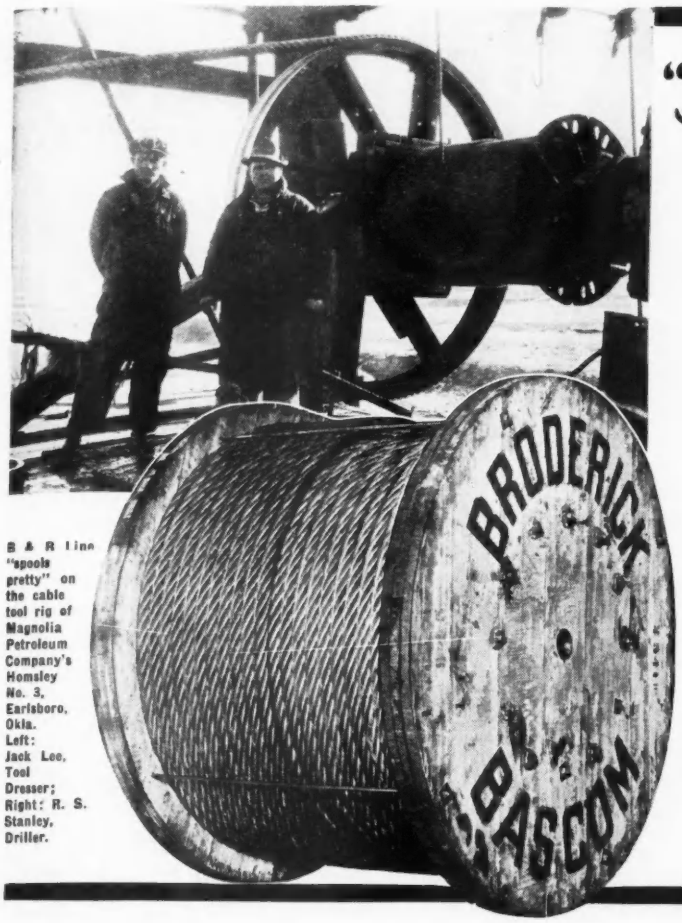
Tool Dresser: "Th' 'ell you say! An' only been in th' hole three hours? Who's doin' your bit dressin?"

Driller: "Nobody!"

Tool Dresser: "Fine! How 'bout givin' me some of your business?"

Driller: "Listen, big-boy, we're usin' APPLEMAN'S on this job . . . ***they*** don't need any dressin'!"

B. K. APPLEMAN
BEAUMONT, TEXAS



B & B Line "spools pretty" on the cable tool rig of Magnolia Petroleum Company's Homsley No. 3, Earlsboro, Okla. Left: Jack Lee, Tool Dresser; Right: R. S. Stanley, Driller.

"Just Naturally A Good Line"

Listen to R. S. Stanley, Driller, calling down Jack Lee, Tool Dresser, for saying they have good luck with their *B & B Cable Tool Drilling Lines:* "Good luck, your eye! It's just naturally a good *line.*" *Naturally* it is. The wire is specially drawn and put through four very strict tests. It is laid up on machinery designed to impart to the rope that *springy* quality which makes drillers call it "the easiest handling line made—a mighty pretty spooling line that you can count on to drill ahead of the tools."

Distributors in all fields handle B & B Patentsteel, Extra Strong Cast Steel and Cast Steel *Cable Tool* Drilling Lines, Sand and Pumping Lines, and invincible Yellow Strand Rotary Lines.

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NR696

PRODUCTS *for pumping wells*

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Admore Liner Barrels

the most efficient liner barrel made

With the ADMORE a pulsating effect is obtained which keeps packing alive and active — packing replacements are few. Ask us for the names of users of the ADMORE—investigate this unit carefully.

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Manufactured in a modern plant, geared to modern production methods. Result: the ADMORE sells for LESS and delivers MORE.

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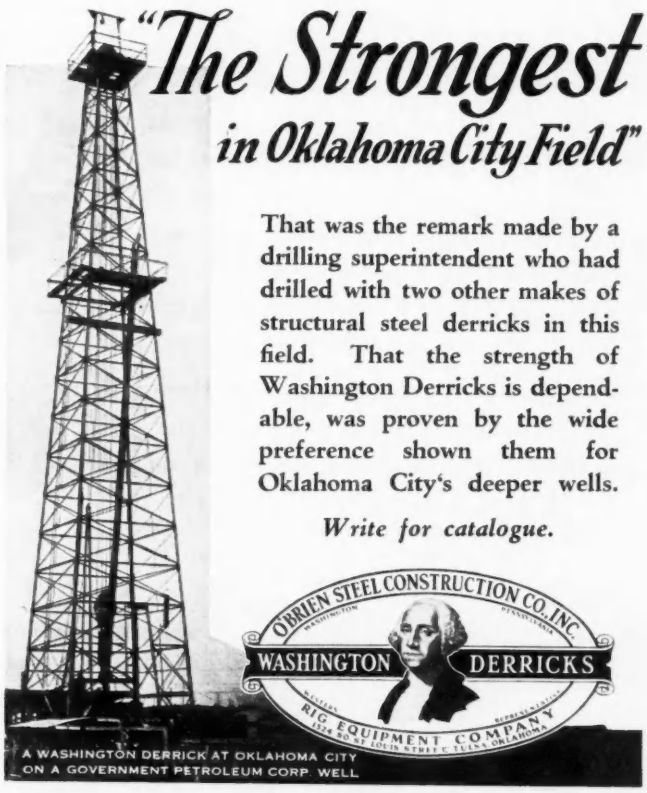

That was the remark made by a drilling superintendent who had drilled with two other makes of structural steel derricks in this field. That the strength of Washington Derricks is dependable, was proven by the wide preference shown them for Oklahoma City's deeper wells.

Write for catalogue.

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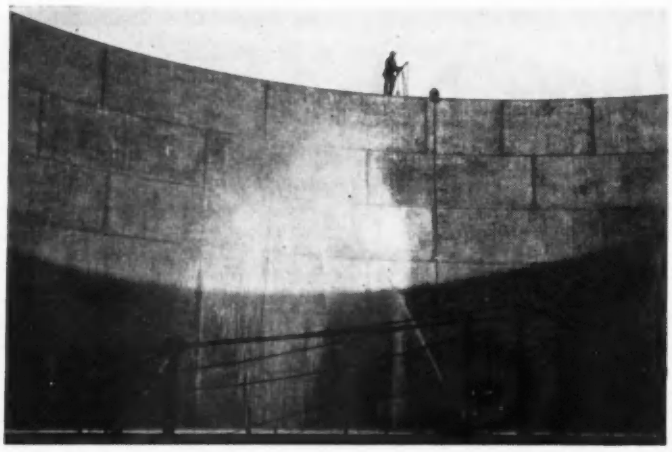

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For instance, one California concern found it necessary to repair the floor plates in one of its 118,000 barrel tanks. In less than three days a crew of six men, using Oakite materials and methods had completely removed the oil so that the tank was cleaned to the metal. Not a trace of oil deposit remained to hinder a perfect welding job, or to cause dangerous gas fumes.

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Oakite Service Men, cleaning specialists, are located in the principal industrial centers of the U. S. and Canada

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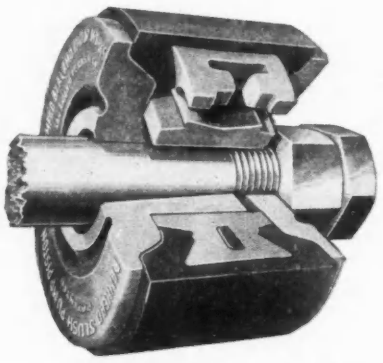
Industrial Cleaning Materials and Methods

Ramhead
SLUSH PUMP PISTONS



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Cups have been eliminated and the metal-to-metal principle for working parts is carried out with the steel plunger operating against chrome nickel semi-steel liners. The well-known Barnwell plunger feature has been built into the pump by means of special cage construction, minimizing oil emulsion, eliminating "gas locks" and facilitating the handling of sand. Provision is made for tightening the rod string or, in case of excessive sand conditions to avoid a "wet" tubing job. Axelson representatives will be glad to give full details concerning the savings that can be derived from installing an Axelson Liner Insert Pump.

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Numerous installations have definitely proven the pump.

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THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

STRAIGHT FACTS

This is the sixth of a series and the 1st ad on insert liner pumps

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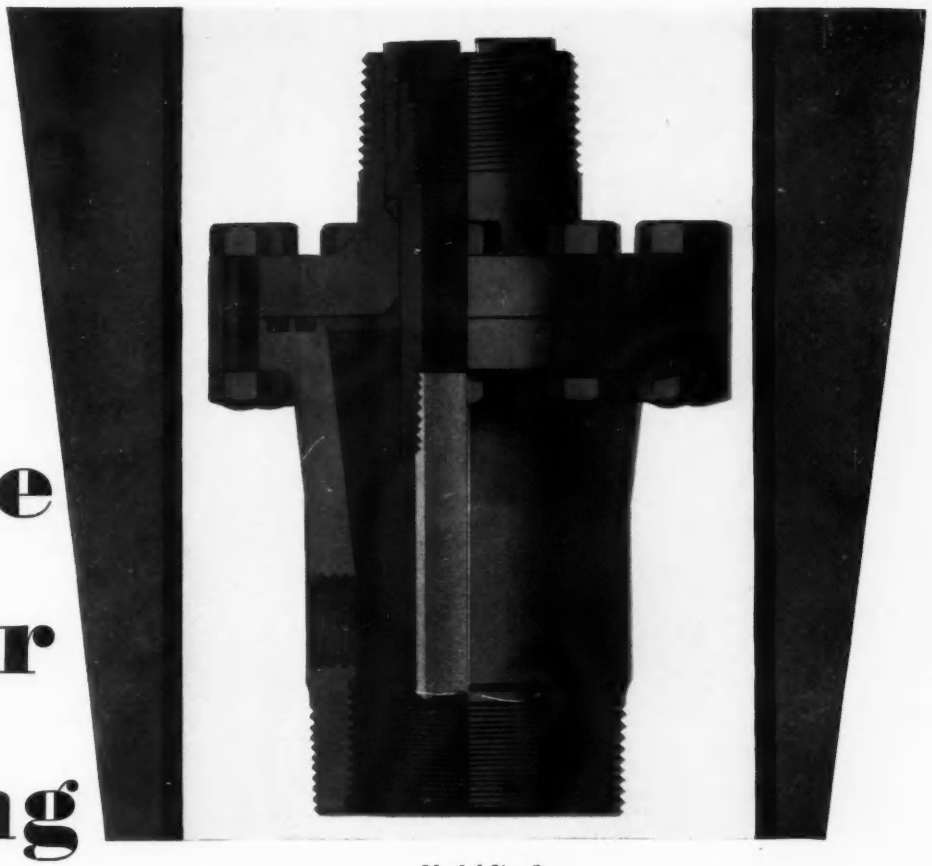

Model No. 3

with this

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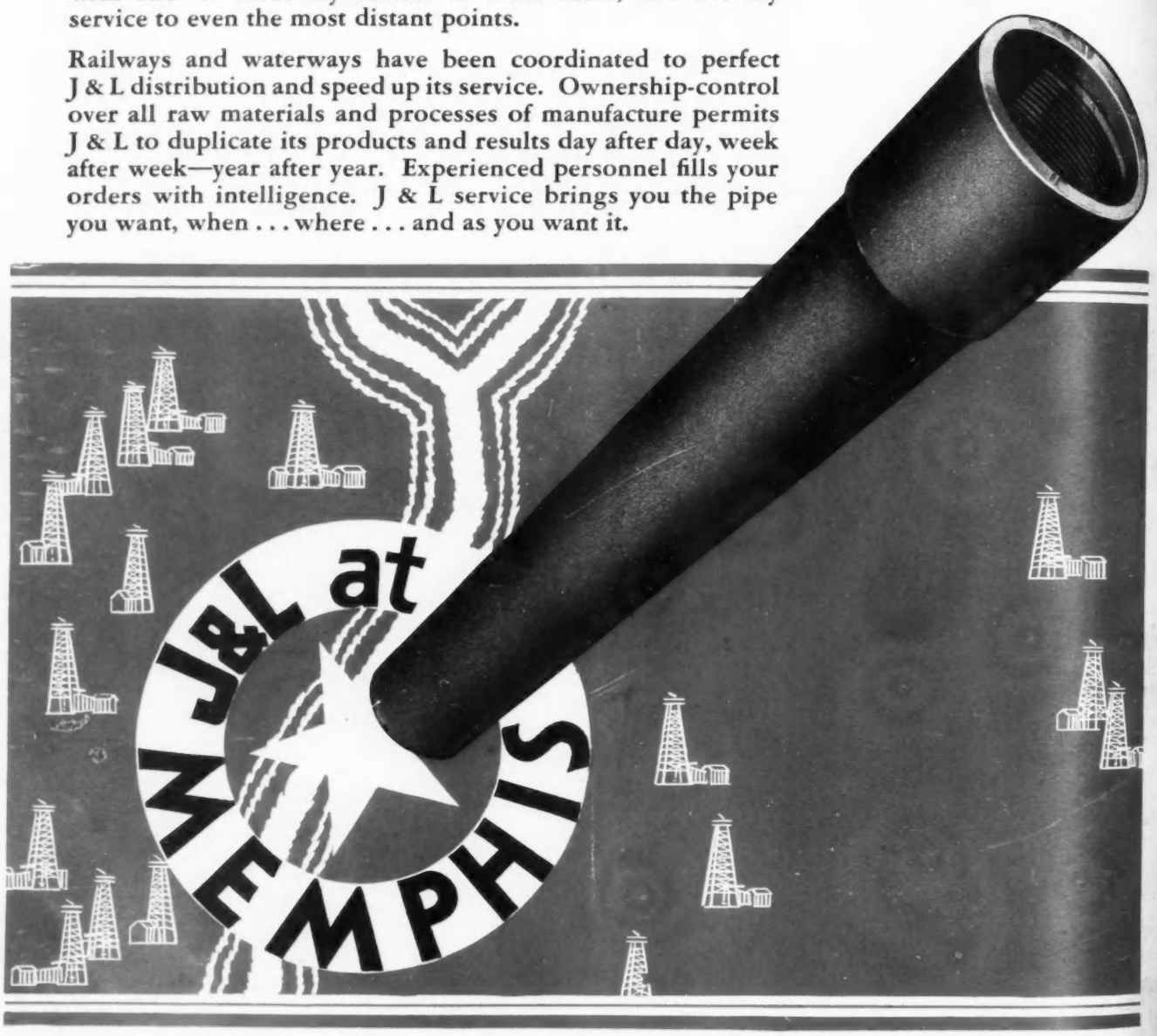

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